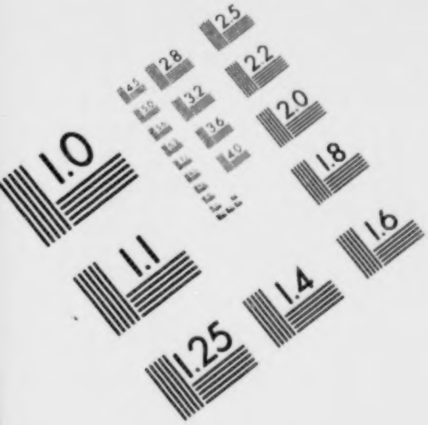
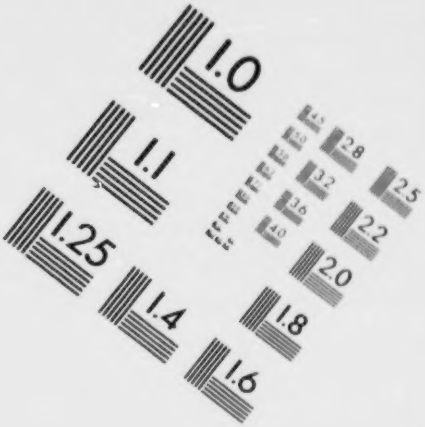
AIIM

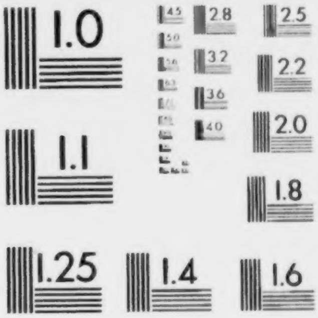
Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202

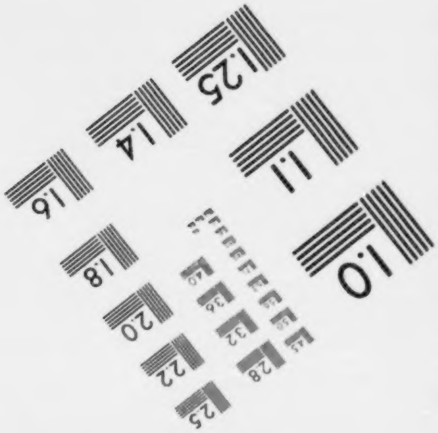

1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0

Centimeter
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
mm
1
2
3
4
5
Inches


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6

1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0

MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.

DOCUMENT RESUME

ED 473 801 CS 511 786

TITLE	Proceedings of the Annual Meeting of the Association for Education in Journalism and Mass Communication (85th, Miami, Florida, August 5-8, 2002). Communication Theory and Methodology Division.
PUB DATE	2002-08-00
NOTE	531p.; For other sections of these proceedings, see CS 511 769-787.
PUB TYPE	Collected Works - Proceedings (021) -- Reports - Research (143)
EDRS PRICE	EDRS Price MF02/PC22 Plus Postage.
DESCRIPTORS	Adolescents; Advertising; Agenda Setting; Animation; Cognitive Processes; Communication (Thought Transfer); Computers; Freedom of Speech; Higher Education; *Internet; *Journalism Education; Mass Media Effects; *Mass Media Role; Opinions; Presidential Campaigns (United States); Race; Social Status; Substance Abuse; Television Research; Use Studies
IDENTIFIERS	Computer Assisted Reporting; *Framing (Communication Behavior); Investigative Journalism; Prescription Drugs; Priming Effects; Public Service Advertising; Taiwan; Television News; Uses and Gratifications Research

ABSTRACT

The Theory and Methodology Division of the proceedings contains the following 16 papers: "The Deep Audit as an Epistemology for the Watchdog: Computer-assisted Reporting and Investigative Journalism" (John E. Newhagen); "Race and Class in 1980s Hollywood" (Chris Jordan); "The Impact of Website Campaigning on Traditional News Media and Public's Information Processing" (Gyotae Ku, Michael Pfau, and Lynda Lee Kaid); "Priming Effects Revisited: Use and Disuse of Contextual Primes in Dynamic News Environments" (Young Mie Kim); "Reframing Frame Analysis: Gaps and Opportunities in Framing Research" (Sonora Jha-Nambiar); "Motivations to Form Opinions Based on Reference Group or Generalized Others' Opinions" (Irkwon Jeong and Carroll J. Glynn); "Constructing Theory for Complex Systems" (Dominic L. Lasorsa); "Agenda Setting, Media Framing, News Priming and Status Conferral: A Theoretical Synthesis" (Dominic L. Lasorsa); "Is the Computer a Functional Alternative to Traditional Media?" (Xiaomei Cai); "Saying 'May Cause Internal Bleeding' with a Smile: A Multi-Year Analysis and Comparison of Prescription Drug Advertising" (Samuel D. Bradley, Yongkuk Chung, Leah M. Haverhals and Annie Lang); "Effects of Text and Animated Graphics in Television News Stories on Viewer Evaluations, Arousal, Attention, and Memory" (Julia R. Fox, Yongkuk Chung, Seungwhan Lee, Nancy Schwartz, Leah Haverhals, Zheng Wang, Annie Lang, and Deborah Potter); "Theory of Communication Outlets and Free Expression: A Humanocentric Exploration" (Shelton A. Gunaratne); "Framing Effects in Homogeneous and Heterogeneous Media Environments: The Cases of the 'On Taiwan' Controversy and the Fourth Nuclear Power Plant Dispute" (Huiping Huang); "It's an Arousing, Fast Paced Kind of World: The Effects of Age and Sensation Seeking on the Information Processing of Substance Abuse PSAs" (Seungwhan Lee, Yongkuk Chung and Annie Lang); "Processing Anti-Drug Public Service Announcements: The Role of Perceived Self-Relevance" (T. Makana Chock, Mija Shin, Yongkuk Chung, Suengwhan Lee and Annie Lang); and "A Structural

Reproductions supplied by EDRS are the best that can be made from the original document.

Equation Model of the Uses and Gratifications Theory: Ritualized and Instrumental Internet Usage" (Hanjun Ko). (RS)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 473 801

Proceedings of the Annual Meeting of the Association for Education in Journalism and Mass Communication (85th, Miami, FL, August 5-8, 2002): Theory and Methodology Division.

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL HAS
BEEN GRANTED BY

J. McGill

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

CS 511 786

RUNNING HEAD: DEEP AUDIT

The Deep Audit as an Epistemology for the Watchdog:

Computer-assisted Reporting and Investigative Journalism

John E. Newhagen

Associate Professor

Philip Merrill College of Journalism

University of Maryland

College Park, MD 20742

jnewhagen@jmail.umd.edu

A paper presented to the Theory and Methodology Division of the Association for Education in Journalism and Mass Media, Miami, FL. August 7-10, 2002

Abstract

Computer-assisted data analysis, sometimes called computer-assisted reporting, has emerged as an innovative form of investigative journalism during the past 35 years, especially in the 1980s and 1990s. Its legitimacy has been validated by prizes and awards, but it has failed to become fully integrated into the journalistic routine. That fact is evidenced by the ambiguous location that practitioners of computer analysis occupy on newsroom organizational charts, frequently classified as members of "special projects" teams. The uncertain place of computer analysis may be due in part to journalism's plodding embrace of the computer as a reporting tool. On the other hand, it may reflect a deeper problem, that the practice has not been fully understood in journalism. This paper looks at the idea that the use of computers to clean, merge, and scrutinize large government databases in a quest for newsworthy patterns represents an unique methodology -- referred to here as the *deep audit* -- that is especially useful in alerting communities and their leaders to the need for action to correct misaligned social policy. This discussion suggests the methodology may have much broader application in public policy management and deserves consideration as more than simply a high technology journalistic tool. Time is used to situate and compare the deep audit along a continuum of other research methodologies. An examination of homicide is used as an example of how asking the same question various levels of analysis yields different conclusions, suggesting the special contribution that the deep audit has to offer. Finally the risks of mistakes within various levels of analysis will be discussed to further situate the deep audit as a unique and important research methodology in its own right.

The Deep Audit as an Epistemology for the Watchdog:
Computer-assisted Reporting and Investigative Journalism

Scholarly researchers either implicitly or explicitly constrain the questions they ask within a level of analysis. Traditional labels such as “individual” or “aggregate” come to mind and are usually associated with an academic discipline, such as psychology or sociology respectively. Similarly, levels of analysis also suggest epistemological frameworks and methodologies. Psychology, for instance might employ experiments while sociology is more apt to apply surveys to generate empirical data. Journalists, however, usually do not think of themselves as part of this continuum, even though they may be engaged in a research function. This paper argues that journalists who use computers to analyze large databases are practicing an epistemologically unique methodology that stands between the individual and aggregate levels of analysis.

Another way to mark the boundaries of levels of analysis is by the time needed for a problem solving cycle to take place. Newell (1990) elaborates a scale of human actions according to a set of time bands that roughly correspond to theoretical levels of analysis. The bands range from evolution, which takes a very long time, to biology, which takes a very short time. One important feature of this framework is that it relies heavily on the information processing component of human action. There are certainly behavioral and physical constraints on these processes. However, human problem solving can best be seen as a description of the processes used to acquire and organized enough information to arrive at workable solutions.

Working within the information-processing framework suggests discrete epistemological “contexts” or temporal domains worth considering for their comparative value. The most fundamental level shows how individuals apply psychological heuristics, a kind of pseudo-statistical process, to solve problems immediate to their existence. Above that, the social band informs us about aggregations of humans, such as cultural, political, or social groups.

Newell (1990) also describes a rational band that fits between the social and psychological levels. It has to do with problems that may have a direct bearing on individuals, but whose scope is beyond their capacity to independently solve. A range of local public policy issues, such as law enforcement, school quality, or zoning, can have direct and important effects on the course of individuals' lives but are too remote and arcane to be monitored closely by them. This paper will argue that problems in this rational level can be dealt with through the application of a *deep audit*, accomplished by the merging, cleaning, and close scrutiny of public databases by investigative journalists, represents a unique epistemological solution to this midrange set of problems.

Matching the Problem Spaces to Epistemologies

These epistemological approaches can also be understood in terms of the implications of their outcomes. While discussion of the societal and psychological levels is fairly well developed, the rational level has not achieved the same status as a discrete way of knowing. Each of these three epistemological levels of analysis will be described as unique approaches engineered to address discrete sets of problems.

The Societal Level

Things taking place at the level of social aggregation regulate how we organize and control ourselves as groups. Beniger (1986), for instance, details how the rationalization of production during the Industrial Revolution led to the growth of information processing bureaucracies intended to control increasingly complex human interactions. Giddens (1984) describes how humans deal with the problem of aggregating political power into institutional structures. This social level is where norms, customs, and public policy are made, and is best suited to the epistemology of hypothesis testing and the application of the stochastic inference suggested by Bayesian probability. While the efficacy of such decisions may have profound effects on the course of human life, they are generally not immediate or personal. Discourse about methodology at this level of research is generally confined within a small academic elite, where a refereed scientific journal may have a circulation of only a few thousand.

Efforts to popularize social science as journalism have proved to be somewhat awkward, with scientists frequently claiming such attempts fail to capture the nuance of their work. One important exception has been the application of survey methodology to public opinion polling. Meyer (1991) spearheaded the movement to bring the rigor of social science survey techniques to the mainstream of the newsroom nearly 30 years ago. However, while public opinion polls have come to be commonplace in public affairs reporting, their status is still somewhat ambiguous. Some critics argue that polls tend to focus only on the "horse race" dimension of who will win an election at the cost of deeper analysis of issues. Other critics note that when polls are outsourced to professional consultants, journalists who report on the results may not fully understand the methods and statistics employed. Further, news reports may reduce data to percentages gleaned from simple descriptive statistics or the two-way cross tabulation of data, burying or distorting the inferential power of statistics such as analysis of variance or linear regression that this method has to offer. Even where journalists versed in sophisticated statistical techniques do work at the caliber of peer-reviewed research, translating inferential statistics to an audience of news consumers in a convincing fashion poses special challenges.

The Individual Level How individuals make sense out of their immediate surroundings is described by the psychological end of the scale of levels of analysis. Here the problem is to confront a complex information ecology with limited cognitive resources and make survival-contingent decisions in real time (see Geiger & Newhagen, 1993; Lang, 2000). Time stands out as the constraint that dominates this level because, from a purely functional view, the stakes in an archetypical scenario may be very high -- sometimes even life itself. Because this is so, the rules of the road within the individual level are generally either hardwired into the human brain or so highly over learned that they behave as if they were hardwired (Ekman, 1992). The human information processing apparatus has come to be the result of millennia of evolutionary change, and is by no means specifically designed to deal with the pressures of modern life. Nevertheless, individuals frequently show substantial durability, where, for instance, the processes designed to control attention in a walk through a hostile forest on the daily hunt come into play in guiding an automobile along a six-lane freeway every morning.

The Rational Level One ironic similarity between the abstraction of social science and the concrete reality of everyday problem solving is that the processes that shape them are largely outside of our direct control. Societal level change is simply too grand to be addressed by individual action, while the urgency of daily life dictates that our responses to many situations are largely generated automatically and without much deliberate thought.

This paradox leads to the consideration of the *deep audit* as one solution to a unique epistemological problem: how to study the gray area between individual and social structures that may be under direct human control. This range of problems open to deep audit is situated within a manageable time frame – say months or weeks. It involves rational or deliberate information processing strategies. Those processes are not, however, raised to the abstraction of inferential statistics or social science. Neither are they reduced to the application of the automatic heuristic processes frequently used by individuals to deal with the concrete reality of daily experience.

The key to this problem-solving method has to do with bringing the two adjacent levels of analysis into conformity rather than changing one to suit the other. It is accomplished by manipulating complex data universes in the hope of reducing their dimensionality to the point where discrete patterns become apparent. While journalism may be the highest profile social institution practicing deep audit, it is by no means the only one. A full range of institutions dedicated to the implementation and monitoring of social policy, such as public interest groups and government regulatory agencies, also employ this practice. When the deep audit of public data is employed as an epistemology in a democracy, it implies advocacy – that is, it calls for leaders and policy makers to correct specific problems – and helps serve the "watchdog function" of journalism.

This paper will review the action bands for the epistemologies directly above and below the deep audit in the context of Bayesian probability to better understand the deep audit's unique function. The study of homicide will be used as an example of how inquiry across levels of analysis yields qualitatively unique insights. Finally, the implications of such a scheme are discussed in terms of what happens when the mechanisms of such belief systems fail.

Time as a Constraint on Empirical Knowledge

Time is one of the most important -- and perhaps most neglected -- constraints on the ways humans understand the world around them. Functionalism in cognitive psychology offers one exception, were the role of time is central to the theories generated during the last half century (Greenwald, 1992). That paradigm proposes that organisms must make life and death decisions about rapid changes in their environment in the context of real time if they hope to survive. Real time allows little margin for error and seldom gives the participant in life's drama a chance to go back for a second try. At this level the individuals cannot afford the luxury of deliberation afforded social scientists or journalists when they decide how to respond to imminent danger. It is further important to point out that questions asked at this level are not arbitrary. They may be subjective, but they are guided by the introspective imperative that survival is better than extinction.

At the levels of analysis above the individual the onus of the real time constraint can be relaxed, allowing for qualitatively different problem solving strategies. The relaxation of the time constraint is further reflected by the normative or subjective nature of the questions asked at higher levels of analysis, where the mandate for survival is more distant. This last point is important in bringing the postmodern critique (see Derrida, 1983) into line with the epistemology of empirical science.

Two things, the complexity of the information ecology that surrounds us and the limited mental resources we bring to it, dictate that the most functional way of solving problems involves making the best guess possible given the time allowed by a given problem space. This process usually takes place within a stochastic framework, based on some form of statistical probability. "Problem space" here refers to the range of all possible ways of configuring samples in the arena of inquiry. The problem space serves as the context for any specific sample being used to detect patterns and solve a problem. Because of this stochastic framework, the best place to begin the discussion its at the highest level of statistical certainty, the abstraction of Bayesian probability.

Bayesian Probability. Blalock (1979), in a seminal text on basic social science statistics, demonstrates how "if repeated random samples of size N are drawn from any population having a mean μ and a variance σ^2, then as N becomes large, the sampling distribution of the sample means approaches normality" (p183). This means that the more times a perfect roulette wheel, with 36 numbers, 0, and 00, is spun, the more likely each of the 38 outcomes will appear every 1 out of every 38 tries. This powerful idea, called the Central Limit Theorem is the motor driving most the inferential statistics used to validate hypotheses in social science. The theorem makes the practice of social science possible because it allows for inference to be drawn from a reasonably small sample taken from a very large population. Otherwise questions asked at this level would require canvassing the entire population, a feat attempted by the U.S. government only once a decade.

There is, however, an important constraint on this process usually not taken into consideration. To truly reach the perfect normal distribution, the wheel of probability will have to be spun an infinite number of times, which implies an infinite period of time in which the task can take place. The importance of unlimited time to abstract probability, and its implications on the inferential statistics employed by social science, has gone without much consideration until some social scientists gave the tenants of postmodernism a closer look. Cohen (1994), for instance, points out that probability, or random sampling, does not guarantee a perfect reflection of the underlying population, even when its N is very large. Increasing the size of the sample may make inferential statistics more sensitive to systematic differences, but it may also be misleading in the sense that random outcomes will more likely return Type I errors, that is, saying something is going on when it is not.

Thus, the epistemology best suited to the abstract consideration of an unbounded system is the thought experiment and relies heavily on the logic of the predicate calculus. One of the best known of such mental exercises is the challenge of 19th century Scottish physicist James

Clerk Maxwell to the Second Law of Thermodynamics, or entropy. Maxwell proposed that a demon might sit on the valve between two glass jars filled with gases of different temperature. Entropy holds that over time the temperatures in the two jars will come to be equal once the valve is opened. Maxwell proposed that from time to time his demon might let a large enough number of hot molecules go from the cold jar to the hot jar and upset the certainty of entropy. While the idea was refuted, it still provokes debate even today.

One final important caveat to add to the discussion of stochastic logic is that even at this high level of abstraction, the questions that get asked are not value free. Smith (1998) discusses how the Victorian ethic was indeed evident in exactly the kind of thought experiments represented by the Maxwell demon.

Figure 1 details the epistemological context of Bayesian probability as taking place in an infinite time space, allowing for an infinitely large population, and being best suited for study by the thought experiment.

Social Science. As Western society became increasingly complex, the need for an epistemology capable of detecting changes and patterns not apparent to the naked eye became more and more important. The first step was fostered by the need for statistics to regulate quality control in the mass production process and came to serve social science as tool to detect very small differences in very large populations. But as the Industrial Revolution matured into modernism, the need to be able to describe complexity became even more profound. Gergen (1991), for instance, discusses this complexity as a problem at the very root of concepts as basic as our sense of self.

For instance, social science techniques can inform us about the effects of viewing violence on television (Gerbner, Gross, Morgan, & Signorielli, 1985). Questions like this are tested with inferential statistics based on the Central Limit Theorem. Here the null hypothesis, or hypothesis of no difference, is set up as a straw man, and its rejection implies that there is "not nothing" associating the variables that make it up. Hence, Gerbner and his associates began by stating the proposition *viewing television violence makes no difference to how the viewer perceives the world*, and then went show its statistical improbability.

The time problem surfaces at this level of analysis because, while the population of images on television is very large, it is not infinite. This means that the even the most carefully drawn sample still contains a small, but nontrivial, margin for error. This forces social scientists to make a leap of faith. They are forced to draw a finite sample and study it during a finite time span simply as a function of the limited resources available to them. Such decisions are justified on the grounds that the populations they study are so large, or what Dennett (1995) calls *vast*, they can be practically conceptualized as infinite. Chances are that assumption is correct most the time, or at least frequently enough to trust social science as more than alchemy. These methods are indeed sound enough that a close look at the radical critique of empirical science proposed by some critical theorists can be made to look foolish (Sokal, 1996).

Consider the application of social science methods to the problem of murder in our society. Wellford and Cronin (1999) used a field experiment to examine 798 homicides in four cities with different combinations of success rates in solving homicides and other crimes. The study employed the use of inferential statistics, such as linear regression, to show that the city adhering most closely to basic standards of crime investigation solved the most homicides. It is important to note that the study does not provide insight into the course of a particular investigation, but comments only on police departments as aggregated units. The statistics employed generate a standard error that can serve as the basis for inference, or as the ability to predict future events. (In this case, the authors argue that if standard police practices are fully employed, the number of unsolved homicide cases can be dramatically reduced.)

It is, however, important to understand that even though social science is cloaked in empirical methods driven by statistical certainty, the basic question-asking process is still normative. Krueger (2001) points out that "the selection of hypotheses, their number, their location on the continuum of possible hypotheses, and their prior probabilities depend on the researchers' experience, their theoretical frame of mind, and the state of the field at the time of study" (p. 19). Why, for instance, wasn't the resolution of cases of petty theft studied? Couldn't it be argued that such crime would be much more likely to affect the lives of most people, and thus be more relevant to their perception of public safety than homicides, which take place much less frequently?

Figure 1 summarizes the epistemological context of social science as being constrained by time frames of years, within a vast (but not infinite) population space, and employing the methods of hypothesis testing. At a practical level, the process of peer review within the canons of the Academy employed by scholarly journals may take years to complete before publication of results becomes a reality. Of course, this makes the plodding process of social science awkward to the application of human problems that need immediate attention.

Everyday life Solving problems in the real time of everyday life is not a new human enterprise. Our most distant ancestors dealt with the daily ordeal of figuring out what caused the rustling in the bushes fast enough to make survival-contingent decisions to flight or flee. Evolution has endowed humans with their own set of pseudo-statistics called psychological heuristics. These heuristics are shortcuts to help make decisions in complex environments very rapidly based only on limited information. Tversky and Kahneman (1974), for instance, detailed the representativeness heuristic, where people expect a process such as a coin toss to be represented locally as well a globally. This leads to the gamblers fallacy and the insensitivity to information about predictability. It can also be, however, a conservative strategy that offers the security in classification that overestimates risk. If a person who believes he or she will be more likely to die in a plane crash than by cancer decides to quit flying, that person is much less likely to die in a plane crash – notwithstanding the fact that the chance of death by cancer was really much higher statistically in the first place. This strategy of "it is better to run away, to come back and fight another day" is the direct result of having to make high-risk decision under the pressure of real time. In a sense life is an ordeal of constant struggle to stay in the present, that is, to survive. In a contemporary setting, Newhagen and Reeves (1992) have shown it takes around 1 to 3 seconds to execute memory retrieval tasks for material that people see on television. The weakness of the heuristic approach is that it tends to over classify things as negative (Newhagen, 1998). This stands to reason because the cost of being wrong about any novelty in a benign environment is arguably higher for negative changes than for positive ones. This makes plausible Gerbner's contention that exposure to violence on television gives viewers a sense that the world is a scarier place that it really is.

Returning to the example of homicide: The range of direct human experience is very short in this area, and the population of interest is very small. Here one homicide down the street will likely *cause* neighbors to inflate the actual chances of their falling victim to such a crime simply because of its proximity. This is efficient to the degree that *any* odd shadow in the back yard at midnight can be classified as a possible murderer on the prowl. Even if it is the case that the vast majority of such shadows turn out to be neighbors' pets, it does prompt the resident to slam the double bolt lock shut and call 911, thus reducing the possibility of falling victim to such a violent crime. True, this heuristic may promote neighborhood crime watch programs, but it also may result in the kind of social isolation described by Putman (2000). While it can be argued that the application of ancient psychological heuristics to contemporary life may be non-adaptive, the questions that get asked at this level are neither normative nor arbitrary. However distorted the cognitive or behavioral responses to complex stimuli generated by our contemporary social milieu might be, the force driving decisions at this level is the imperative to survive.

Figure 1 describes the epistemological context of everyday life as taking place from minutes to milliseconds, the population space being very small, and the method of choice to solve problems to be the psychological heuristic.

Pattern Identification The process of computer-assisted reporting in epistemologically interesting because of the level of analysis it represents. On one hand, the patterns under scrutiny are too subtle to be detected by the psychological heuristic. On the other hand, the patterns are not nested within a sufficiently large population to warrant the application of inferential statistics. It stands to reason that humans would have figured out an epistemology designed to deal with midrange problems between the adreneline-driven present and vastness of the nearly infinite future. As reasonable as that idea seems, it is odd that more attention has not been paid to medium-term problems -- those too large to be managed by internal heuristic mechanisms but still small enough to make a real difference in peoples lives. Common problems within this range exist in time spans ranging between months and weeks. Problems that arise at this level might have to do with public policy. Issues about zoning and growth control may be out of the hands of individuals, but they may still have important medium-term implications for an individual's security and livelihood. This range of issues can be the subject of overt advocacy in a democratic society, where different entities take on the task of figuring out what the "best" level of human action is or at least calling attention to the fact that existing systems are not functioning at an optimal or utilitarian level. Journalism may be viewed as one of those entities.

Journalism's proper role in this regard – and whether journalism's place is merely to transmit information or to unearth patterns not visible to others – has certainly been a subject of debate within and outside journalism. Less subject to discussion is a theory of knowledge appropriate to detecting patterns of interest to the public at this level of analysis. Meyer (1973) proposed the application of social science methods to journalism, including computer analysis of survey data, significance testing and inferential statistics. He called this practice "precision journalism." It was seen as a way to improve the collection and interpretation of information, to get beyond the practice of merely transmitting untested information, and to detect important truths that might otherwise be missed, all in service if a systematic attempt to understand matters of relevance to readers. Though precision journalism has gained a following among some investigative journalists, the use of such statistical methods has been adopted by no more than a tiny fraction of reporters (Maier, 2000; DeFleur, 1997). On the other hand other forms of computer analysis in reporting have taken hold in journalism, following the model of demonstrated by Jaspin (1989, 1993) in the late 1980s and early 1990s. Jaspin used computers to analyze large government databases by such basic techniques as searching, sorting and counting, and cross-indexing, or looking for records in one database that also appeared in a second, unrelated database. These databases may suffer from what is sometimes described as a "dirty data" problem (Houston, 1999), ranging from typing errors and inconsistent spellings to the disconnect between the purposes for which a government database was created and the way in which a reporter plans to use it. The cross-indexing or merging of databases may require extensive examination of the underlying records – first to determine how best to perform the match and then to confirm that the links suggested by computer analysis are valid. These practices in the service of pattern identification, often in connection with a newly configured data universe that is at once an enhanced and constrained version of the original, encompass the concept of "deep audit" as used in this paper.

Ettema and Glasser (1998) argue that such investigative reporting is qualitatively unique because the journalist takes an active role in the formulation of the value-laden questions they ask, thereby making "moral judgments." They state that standard beat reporters, for instance, simply transmit "bureaucratically sanctioned accounts" which reinforce conventional definitions of social reality, upholding the normative order (Ettema & Glasser, 1985, p.188). This view depicts the difference between investigative journalism and standard daily reporting as having to do with the way questions are asked, rather than how they are answered. But does this imply that investigative journalism reaches into some value system independent of the established "normative order," or is the threshold for what constitutes a significant outcome set either implicitly or explicitly by law, policy, or custom? Sante (1991) argues that 19th century muckrakers such as Jacob Riis simply looked at extant social standards as the foundation for their campaigns. Sante contends that the standard for housing could be seen in the New York tenement, an architectural urban form originally intended to be a single-family dwelling. Riis' campaign against overcrowding, where each room of a tenement frequently housed an entire family, was simply based on a comparison of reality to the implicit single family standard. It should further be emphasized that from a postmodern viewpoint investigative reporting is not unique in asking value-laden questions, virtually any question asked above the level of the individual is -- at its heart -- normative.

It might be more epistemologically useful to work from how journalists answer their questions rather than how they ask them. The substantive difference between computer-assisted reporting and standard public affairs reporting has as much to do with who is doing the primary analysis of data as it does the questions asked of those data. Standard reporting technique does not allow the time or resources to engage in primary data analysis. It is, then, at the mercy of those that do the analysis with regards to the kinds of questions that get asked. Ettema and Glasser (1985) may be doing a disservice to beat reporters when they depict them as mindless drones simply moving information from public officials to mass publics without taking the time to evaluate the validity of their claims. For instance, Levy (1981) details a number of techniques journalists use to "disdain" reports from officials they find questionable by inserting words such as "so-called" in their stories. What constrains journalists may have more to do with their inability to analyze primary data than it does with their will to challenge the conclusions of those who can.

Investigative journalism distinguishes itself in its ability to look at raw data, and in doing so having more control over the kinds of questions that get asked. Computer-assisted reporting takes a giant step forward in that process in its ability to harness the power of the digital computer to process vast amounts of data under the time constraints imposed by journalism.

In doing so there are two very important features of the process that should be kept in mind. First, while computer-assisted reporting teams may have more flexibility in the kinds of questions they ask than the beat reporter, those questions are grounded in the norms, cannons, and codes of the social milieu in which they work. Second, while the patterns they uncover may not be visible to the naked eye, they are not the product of social science technique. Quite the contrary, the judgment and values the computer-assisted reporting team employs are founded very much in journalist tradition. What distinguishes computer-assisted reporting teams is the way they creatively construct previously unavailable data sets through the use of the digital computer. Such data sets are by definition censuses and do not require the application of inferential statistics or formal hypotheses. Data are simply compared to social or cultural expectations. In this sense the questions computer-assisted reporting teams ask may be normative but their conclusions are not independent of the extant value system in which they live. Thus the journalist-researcher uses public standards as the threshold when he/she decides if a pattern is significantly aberrant to justify publication.

The art of this craft is in "seeing" the pattern has as much to do with the way data sets are constructed as it does with the way they are subsequently analyzed. The term used here to identify this epistemology, the deep audit, suggests an analytical process of gauging actual performance against social standards that goes below the obvious or the available. A classic example of such journalism, which followed a series of deaths and injuries to Rhode Island children in school bus accidents, involved matching the names in a database of school bus drivers to the names in state databases of traffic infractions and criminal cases (Jaspin, 1989, 1993; Jaspin and Johnson, 1986). This work detected a pattern of school bus drivers with problematic driving histories and led to the exposure of loopholes in the system for hiring and monitoring the drivers. Notice that Jaspin did not decide independently that school bus drivers ought to have good driving records. That conclusion is implicit in the privileged status our society gives children and the importance it gives to their safety. It manifests itself in everything from the bright colors buses are painted to the exceptionally strict laws concerning obedience to their flashing stoplights.

Jaspin's advocacy of what he termed "computer-assisted reporting" and his establishment of a training center at the University of Missouri coincided with the increasing popularity and availability of the personal computer, the increasing computerization of government records, and a system he developed for transferring data from government mainframe computers into reporters' desktop machines. For more than a decade, a steady stream of Pulitzer Prizes and other awards have gone to news stories based in reporting that relied, in part, on computer analysis using the techniques of "precision journalism" and "computer-assisted reporting." Computer analysis is practiced in some form at many newspapers, however, within those newsrooms even the more accessible techniques advocated by Jaspin do not appear to be widely diffused among reporters (Maier, 2000).

The challenges in the deep audit process could be enumerated in various ways. One, for example, would be a consideration of the problem of legal access to data. Though laws and court decisions have gradually expanded the definition of public records to include a greater variety of electronic data, some sorts of information are not available to the public and press in electronic form because the law restricts their release in any form. This includes such things as police records in ongoing criminal investigations, applications for welfare, or most income tax returns. Yet another useful way to look at the epistemology of the deep audit, in terms of constraints, is to think about the questions of time and problem space and draw comparisons to what is going on at the levels of everyday life and social science.

The deep audit in journalism typically takes place over a much longer period than the "everyday life" level of analysis and the work typically associated with meeting the ever-present deadlines around which news organizations are typically organized. In addition, the time required to detect and then verify newsworthy patterns cannot be reliably predicted, and the expenditure of such time carries the risk of yielding no story at all. This feature of the deep audit stands in contrast to the more anecdotal forms of journalism centered on tips, news events, or disputes between public figures who are more than happy to tell their side of the story to a reporter. The differential in expenditure of time – including the time needed to learn to use analytical software and haggle with public officials over access to data – is certainly a potential source of friction in the newsroom and a disincentive for many to engage in the deep audit process. Yet the deep audit may be concluded in a time frame shorter than that required for a rigorous and extended research effort in the social sciences, in part because the journalist's work may be confined to a single community and limited to what can be learned from available data. In addition, rather than being limited in research design to testing a hypothesis conceived in advance and then either accepting or rejecting it, as is the custom in certain traditional forms of social science research, the process of computer-assisted analysis leaves the reporter free to drop the initial line of inquiry when it bogs down and head off on a tangential path that seems more likely to reveal something achievable and newsworthy. When successful, the deep audit may result in blockbuster revelations of patterns not detectable or credible at the mere level of anecdote, and such revelations may be followed by prizes and enhanced stature in the community and the publishing world. Senior editors have found computer analysis to be an irresistible capability to have in their newsroom, but few have made an all-out effort to expand the percentage of staff capable of doing that work.

The extent of the problem space for the deep audit is also a useful way to compare this approach to what is going on at levels of analysis above and below it. By making use of data that may be detailed and extensive, the deep audit can operate at a level beyond what is accessible in everyday life. Other aspects of the process, however, act to reduce the problem space below the "vast" level claimed by social science, which endeavors to develop findings applicable to society at large. For example, computer-assisted analysis in journalism, with the exception of polling, tends not to want to apply its findings to anything other than the "sample" studied, and that "sample" is typically seen as 100 percent of the population at interest. The previously mentioned study of school bus drivers looked at all school bus drivers in Rhode Island, not a sample of them, and made no effort to extrapolate its findings either to other states or to school bus drivers in a continuum including the past and the future.

This process of cleaning and merging databases reduces the dimensionality of the data universe in such a way that otherwise hidden patterns emerge. Inferential statistics are not automatically excluded from the deep audit process, and may certainly be used in the background from time to time as one of a number of mechanisms for validating results, but they are not intrinsically part of the process. As in social science methodology, the deep audit does ask the question "compared to what?" But a key difference is that the "watchdog" role is paramount in the deep audit and its focus is often local rather than societal in scope. Also, the deep audit may be exploring new territory where no other relevant data has been gathered by social scientists or others. As a result, the standards of comparison for the deep audit may be more flexible than those for social science. For example, traditional social science seeks to compare results from a sample to the hypothetical picture of a vast population of potential samples. In the deep audit, it may be adequate to compare the results of research to what would be expected from requirements established by law or regulation, or even to make comparisons to what would be expected from prevailing standards of justice, decency, or common sense. The school bus driver story alerted the public and policy-makers to a problem, and even without reference to patterns from other jurisdictions, the need for action was clear. The licensing system and administration were revamped following the story, and the licenses of dozens of drivers were revoked after the state looked into their records (Jaspin, 1993).

Some of the features enumerated here for the deep audit as an epistemology operating in a level of analysis between everyday life and social science can be seen in its application to the issue of homicide investigation. As the 1990s came to an end, reporters and editors at *The Washington Post* became interested in the striking number homicide cases during the decade that had gone unsolved in the District of Columbia – about 1,500 of them.[1] Although the city's murder rate had declined sharply during the 1990s, the police department's success rate in solving homicide cases had declined even faster. A reporting plan was eventually put in place that involved three reporters, a researcher, and an editor, and it included three general lines of inquiry – human sources, examination of paper documents, and computer analysis of homicide and court records. A four-day series resulting from this effort was published at the end of 2000 (Thompson, Chinoy & Vobejda, 2000). One of the original goals of this reporting plan was to understand why the rate of solving homicide cases had declined and to evaluate the claims of some members of the law enforcement community that problems within the police department were contributing to the troublesome state of affairs. Reporting based on documents, human sources, and prior news coverage did suggest problems with the deployment and supervision of homicide detectives, shoddy handling of case files, and a repeated failure to make adequate and lasting improvements in the wake of prior revelations and studies.

Electronic data were collected during the early phases of this project, including a database of homicides from the D.C. police and another database of murder and manslaughter charges from D.C. Superior Court. It soon became apparent, however, that these databases, which were primarily designed for tracking homicides or court cases but not for analyzing them, did not contain enough information about each one to be able to detect meaningful correlations between the status of an investigation and the way it was conducted. By comparison, a detailed and thorough social science study released at about the same time (Wellford and Cronin, 1999) examined variables affecting homicide clearance rates in four unnamed cities. In that study, researchers were granted access to nearly 800 homicide case files – including the files of open cases that are normally not accessible by journalists – and extracted 215 variables from each file. The resulting report concluded that a variety of factors related to police performance were associated with case closure rates, including response time, follow-up, and the actions of the first officer on the scene. The databases that *The Washington Post* obtained from police and the courts did not lend themselves to that sort of analysis, and the details of a requisite number open cases would only have been accessible through extraordinarily difficult and time-consuming reporting efforts. But the deep audit process did help reveal other patterns related to the city's problem with unsolved homicides, and the bulk of work was completed in just under a year of steady effort, the sort of time-frame acceptable to a large news operation for a limited number of projects.

---

[1] Much of the description of *The Washington Post's* series on homicide in Washington D.C. was based on personal conversations with Ira Chinoy, one of the members of the team who worked on the project.

Three key patterns emerged from this deep audit approach. One was that there had been an increasing reliance by the D.C. police on something other than an arrest to declare a case closed; these so-called "administrative closures" often involved citing a dead suspect as the most likely perpetrator, and the examination of case files raised questions about the adequacy of the evidence in some of these cases. The second pattern involved repeat killers. In one decade, at least 225 slayings – 1 out of every 10 closed cases – were allegedly committed by perpetrators whom police deemed responsible for a prior killing. The third pattern came to be seen as evidence of a culture of "street justice." At least 150 alleged killers had themselves been killed, and about half of those alleged killers had already gone through the criminal justice system before they were slain. These patterns, not evident or even expected when the reporting process began, emerged through a laborious deep audit process. Separate databases of victims and alleged killers were assembled. The spelling of names was routinized enough to correct for rampant variations and look for matches: alleged killers who appeared in connection with more than one date, alleged killers who also appeared in the list of victims, and homicides that were declared solved without a corresponding murder or manslaughter case being files in D.C. or federal court.

Ironically, the patterns that emerged in this deep audit would probably not have been accessible to a social science study that looked at cases in the aggregate without looking for specific connections between the individuals involved. At the time of *The Washington Post's* reporting project, in fact, a check of leading criminologists specializing in the study of homicide suggested that such patterns had largely escaped notice in the field. On the other hand, though great caution was employed to ensure the veracity of information on which the reporting was based, the problem of limited and initially "dirty" data made it difficult to draw distinct statistical inferences. That, however, did not keep the project from fulfilling the "watchdog" function – alerting the public and policy makers to a serious problem in their midst. What's more, the ameliorative efforts by public officials began even before the series ran. In early 2000, *The Washington Post* requested access, under the city's public records law, to dozens of closed homicide case files maintained by the D.C. police. These included cases identified through the deep audit process as potential "administrative" closures -- cases listed as closed without corresponding murder or manslaughter charges filed in court. Following the newspaper's request, police conducted an internal review of the cases and learned of a number of problems with the way they had been handled, and the police chief announced in a radio interview that his department's process for investigating homicides was "dysfunctional" and that he was going to act to fix it (Thompson & Dvorak, 2000).

Several months later, after the series appeared, the police chief announced additional reforms, members of the public and city officials issued calls for action, and the city council held hearings and issued its own report on the homicide closure problem (Thompson & Pierre, 2000; Patterson, 2001; Ramsey, 2001). Interestingly, after being alerted to the problem through the watchdog efforts of the newspaper, the police and city council both turned to Wellford and his research on homicide closure rates in four cities for guidance in devising reforms that would lead to improved performance on homicide cases in the District of Columbia (Ramsey, 2001; Patterson, 2001).

The allocation of resources and time required for the deep audit, when compared to other reporting practices, are likely factors in journalism's reluctance to do more investigative reporting or to employ computer analysis of data as a standard reporting tool. The perpetual controversy over objectivity – and whether it is compromised when journalism discovers new truths and then takes a de facto advocacy stand in calling for action – may also play into the lack of a wholehearted appetite for the deep audit and what it reveals. The irony here is two-fold. First, even the supposed objective sciences – with their hypotheses tested in a process from which bias has supposedly been removed – operate within a subjective framework when it comes to the choice of subject matter and the questions to be asked. Second, trained journalists using computers to integrate complex databases may be in one of the best positions to comment on how well a community's systems are doing in the medium term. This is simply an extension of the "watchdog" function. Ironically, Mayo J. and Leshner (2001) found that newspaper readers deemed stories based on computer analysis to be no more credible than stories attributed to standard sources and less appealing. That, however, may not be too important to the efficacy of the process because the true discourse may be taking place between journalism and members of political elites, regardless of the fact such scrutiny takes place in the public sphere (Habermas, 1998). Even if such discourse does not enter into the general debate, this does not dilute the fact that it works to benefit the public.

Figure 1 shows that the epistemological context of pattern identification takes from weeks to months, the population space is large (but not vast), and suggests the deep audit as an appropriate methodological tool.

Conclusion

This paper argues for the inclusion of the pattern matching executed by use of the *deep audit* as a discrete and important epistemological response to the kinds of mid-range problems addressed by computer intensive investigative journalism. The discussion of the deep audit has situated it within a continuum of other, more familiar, empirical methods employed to understand causal relationships in the environment. The importance of induction as a way to link effects to causes is that it allows us to make predictions about the future in the hope that it can be improved, or at least better anticipated. The discussion has not dwelled much on the mechanics of the deep audit as methodology, frequently known as computer-assisted reporting. The fact is that overemphasis on the use of computers has likely drawn attention away from the deep audit as a discrete empirical methodology.

The Cost of Error

Thinking about pattern matching within the context of the epistemological systems that bracket it helps emphasis the conceptual component of the process. This paper has attempted to do that in terms of the different levels of analysis of human action and in the context of how time constrains different problem solving methodologies. Finally the implications of making a mistake will be discussed. After all, one of the best ways to understand a process is to see what happens when it doesn't work.

Social science thinks about Type I and Type II error in the interpretation of hypothesis (Babbie, 1989). Type II error takes place when the null hypothesis of no difference is not rejected when it should be. The convention is that the null hypothesis cannot be rejected unless the p value of the inferential statistic employed is greater than or equal to .05. That means the researcher has to be at least 95 percent certain that the results under analysis are systematic. Type II error is generally considered the least damaging because it is an error of omission. Type I error, on the other hand, takes place when the null hypothesis is rejected, but when there is no real relationship between the variables of interest. This is held to be especially dangerous because it leads the researcher to say something is going on when it is not. While the discussion of Type I and Type II errors are usually confined to the interpretation of inferential statistics, the concepts on which they are based can just as easily be applied to the other epistemological systems described here.

Bayesian Probability This is the domain of stochastic probability, where theory is proposed and tested in the abstraction. That, however, does not mean things cannot go wrong, theoreticians make mistakes too. The implications of error at this level are probably less dire to the workings of society than mistakes at other levels. Figure 2 shows that a Type I error, such assuming that the set of all arithmetic theorems is finite, leads to bad theory. Such errors can be detected and corrected through logic-driven proof, which is what Kurt Gödel did when he showed there is an infinite set of such proofs (Rose, 1997). Type II error, on the other hand, results in theoretical ambiguity, or not being able to demonstrate the proof for a theorem. The impact of Gõdel's proof was profound because it demonstrates that regardless of how many times attempts to demonstrate a proof fail, because the set of possible proofs is infinite, the chance it can be validated always exists. Mathematicians find this prospect particularly unsettling.

Social Science The consequences of a Type I error to social science can be profound. Figure 3 shows such an error results in bad science, such as the 19th century theory of Phrenology. Phrenology came from the theories of the idiosyncratic Viennese physician Franz Joseph Gall (van Wyhe, 2002). One of basic tenets of Gall's system was that the human skull takes its shape from the brain, and thus could be read as an accurate index of psychological aptitudes and tendencies. Implications of Gall's system included, among other things, a scientific justification for false conclusions about the relationship between race and intelligence. Figure 2 shows how phrenology was used to map the mind based on the shape and size of the skull.

Type II error in social science can lead to dogma. Kuhn (1970) discusses the process of scientific progress as revolution rather than evolution. The period between the time when the dominant paradigm in a field runs out of gas and a replacement becomes recognized could be thought of as Type II error. The example frequently used is the period between the exhaustion of "flat world theory," and the Copernican model of a round world.

Pattern Identification Figure 2 shows the implications of a Type I error to the pattern identification process generated by the deep audit can be inaccurate journalism. A news organization would be guilty of a Type I error if an investigative series claimed that an automobile's poorly designed gas tank could explode in a crash, when it did not. On the other hand, if a news organization fails to aggressively monitor the performance of government agencies, and overlooks a practice such as racial profiling by police, it commits a Type II error, opening the door to benign neglect.

Everyday Life Figure 2 shows that making a Type I error in everyday life can result in death or suffering. While many routine decisions might escape such dire consequences, a pedestrian only has to misjudge the distance of an oncoming car once to wind up in the hospital. Type II errors in everyday life are not really unusual and represent the kind of conservative over classification of risk discussed earlier.

The key to understanding empirical ways of knowing is not to pit one against the other in search for a "best method." Rather, the point is that questions important to human life, such as the occurrence of violent crime can be asked at *all* levels of analysis and employ the full range of epistemological methods they suggest. If such an approach is employed the same question will not only yield information to the level of analysis where it is asked, but inform us at other adjacent levels as well. This become particularly obvious when the consequences of mistakes are considered across levels.

Reference List

Babbie, E. (1989). The Practice of Social Research. Belmont, CA: Wadsworth Publishing.

Beniger, J. R. (1986). The control revolution: Technological and economic origins of the information society. Cambridge, MA: Harvard University Press.

Blalock, H. M. Jr. (1979). Social Statistics: Revised second edition. New York: McGraw-Hill Company.

Cohen, J. (1994). The earth is round (p<.05). American Psychologist, 49(12), 997-1003.

DeFleur, Margaret H. (1997). Computer-assisted Investigative Reporting: Development and Methodology. Mahwah, N.J.: Lawrence Erlbaum Associates.

Dennett, D. C. (1995). Darwin's dangerous idea. New York: Simon and Schuster.

Derrida, J. (1983). Literary Theory: An introduction. Minneapolis, MI: University of Minnesota Press.

Ekman, P. (1992). Facial expression of emotion: New findings, new questions. Psychological Science, 3(1), 34-38.

Ettema, J. E., & Glasser, T. L. (1985). On the epistemology of investigative journalism. Communication, 8 , 183-206.

Ettema, J. S., & Glasser, T. L. (1998). Custodian of conscience: Investigative journalism and public virtue. New York: Columbia University Press.

Geiger, S., & Newhagen, J. E. (1993). Revealing the black box: An information processing approach to understanding media effects. Journal of Communication, 43(4), 42-50.

Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1985). Living with television: The dynamics of the cultivation process. J. Bryant, & D. Zillmann (Eds.), Perspectives on media effects (pp. 17-40). Englewood Cliffs, NJ: Lawrence Erlbaum Associates.

Gergen, K. J. (1991). The Saturated Self. New York: Basic Books.

Giddens, A. (1984). The constitution of Society: Outline of the theory of stucturation. Berkeley, CA: University of California Press.

Greenwald, A. G. (1992). New Look 3: Unconscious cognition reclaimed. American Psychologist, 47(6), 766-779.

Habermas, J. (1998). The structural transformation of the public sphere: An inquiry into a category of bourgeois society. Cambridge, MA: The MIT Press.

Houston, Brant (1999). Computer-assisted Reporting: A Practical Guide. 2nd ed. Boston: Bedford/St. Martin's.

Jaspin, Elliot (1989). Computer = Reporting Tool. The Computer Connection, 18-24. Syracuse: S.I. Newhouse School of Public Communications, Syracuse University.

Jaspin, Elliot (1993). The New Investigative Journalism: Exploring Public Records by Computer. Demystifying Media Technology: Readings From the Freedom Forum Center Editors John V. Pavlik and Everette E. Dennis, 142-49. Mountain View, Calif.: Mayfield Publishing Company.

Krueger, J. (2001). Null hypothesis significance testing. American Psychologist, 56(1), 16-26.

Kuhn, T. (1970). The structure of scientific revolutions. Chicago, IL: The University of Chicago Press.

Lang, A. (2000). The limited capacity model of mediated message processing. Journal of Communication, 50(1), 46-70.

Levy, M. (1981). Disdaining the news. Journal of Communication , 31, 24-31.

Mayo J., & Leshner, G. (2001). Analytical journalism: Credibility of computer-assisted reporting. Newspaper Research Journal, 21(4), 68-82.

Maier, Scott R. (2000). Digital Diffusion in Newsrooms: The Uneven Advance of Computer-assisted Reporting. Newspaper Research Journal 21(2), 95-110.

Meyer, P. (1973). Precision journalism. Bloomington, IN: Indiana University Press.

Meyer, P. (1991). The new precision journalism. Bloomington, IN: Indiana University Press.

Newell, A. (1990). Unified theories of cognition. Cambridge, MA: Harvard University Press.

Newhagen, J. E. (1998). TV images that induce anger, fear, and disgust: Effects on appoach-avoidance responses and memory. Journal of Broadcasting and Electronic Media, 42(2), 265-276.

Newhagen, J. E., & Reeves, B. (1992). This evening's bad news: Effects of compelling negative television news images on memory. Journal of Communication, 42(2), 25-41.

Patterson, Kathy, Chairperson (2001). Oversight Report on the Metropolitan Police Department's Homicide Investigative Practices and Case Closure Rate. Committee on the Judiciary, Council of the District of Columbia. February 27.

Putman, R. D. (2000). Bowling alone: The collapse and revival of American Community. New York: Simon and Schuster.

Ramsey, Charles H. (2001). Testimony. Public Oversight Roundtable on Metropolitan Police Department Homicide Closure Rate. Committee on the Judiciary, Council of the District of Columbia. January 25.

Rose, J. N. (1997). Maxwell's demon and the Turing machine: Their processes/dynamics are identical, making them archetypal guides in evaluating the fundamental characteristics of "consciousness." Presented to A.S.S.C. Conference "Demon, Machine & Mind." Claremont College, Pomona, CA. (June 13-16, 1997). [http://www.ceptualinstitute.com/uiu_plus/turingdemon.htm] Accessed January, 2002.

Sante, L. (1991). Low life: Lures and snares of old New York. New York: Vintage Books.

Smith, C. (1998). The science of energy: A cultural history of energy physics in Victorian Britain. Chicago, IL: The University of Chicago Press.

Sokal, A. D. (1996). Transgressing the boundaries: Toward a transformative hermeneutics of quantum gravity. Social Text, 14(1-2), 217-252.

Thompson, Cheryl W., Ira Chinoy, and Barbara Vobejda (2000). Fatal Flaws: The District's Homicide Crisis. The Washington Post, 3-6 December.

Thompson, Cheryl W., and Petula Dvorak (2000). D.C. Homicide Cases to Be Reviewed; Some Files Incomplete, Some Investigations Closed Prematurely, Ramsey Says. The Washington Post, 7 July.

Thompson, Cheryl W., and Robert Pierre (2000). New Team to Review District Homicides; Unclear Case Closures Surprise Ramsey. The Washington Post, 7 December.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. Science, 185, 1124-1131.

Van Wyhe, J. (2002). *The History of Phrenology on the Web* http://pages.britishlibrary.net/phrenology/. [Accessed March 30, 2202].

Wellford, C., & Cronin, J. (1999). An analysis of variables affecting the clearance of homicides: A multistate study. Justice Research and Statistics Association.

	Time Constraint	Epistemological Context	Population Space	Method
Abstract	Infinite	Bayesian Probability	Infinite	Thought Experiments
↑	Years	Social Science	Vast	Hypothesis Testing
↑	Months-Weeks	Pattern Identification	Large	Deep Audit
Concrete	Minutes-Milliseconds	Everyday Life	Small	Psychological Heuristics

Figure 1

Research Method Context and Consequences within Error Type

Method Context	Error Type Type I	Type II
Bayesian Probability	Bad Theory	Ambiguity
Social Science	Bad Science	Dogma
Pattern Identification	Bad Journalism	Benign Neglect
Everyday Life	Death and Suffering	Missed Opportunity

Figure 2

A 19th Century Representation of the Mind Based on the Theory of Phrenology

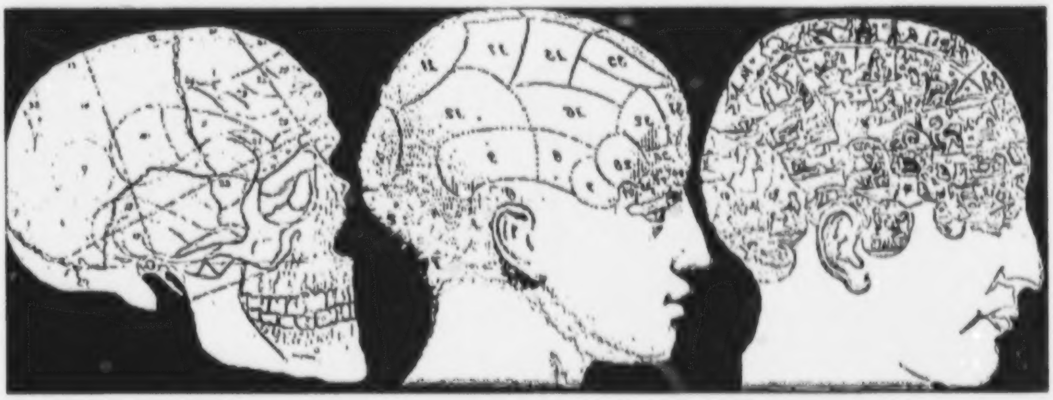


Figure 3

Race and Class in 1980s Hollywood

CT+M

Chris Jordan
Pennsylvania State University
125 Carnegie Building
University Park, PA 16802-5101
(814) 861-8303
cjj6@psu.edu

The strikingly different budgets and creative latitudes afforded Sylvester Stallone and Spike Lee illustrates how 1980s Hollywood's agenda of reducing risk while maintaining volume resulted in a "bifurcated" industry that has since only become more polarized. Biracial buddy blockbusters such as *Rocky III* that trivialized race and class frictions proliferated at the most visible and lucrative level of moviemaking during the 1980s while low-budget specialty works such as *Do the Right Thing* (1989) that provoked reflection struggled to achieve public visibility because of limited studio promotion.

Rocky, Rambo, and Reagan

In 1993, Sylvester Stallone reflected on the confluence between movie fantasy and political reality that occurred during President Ronald Reagan's two terms in office from 1981 and 1988. "I ended up becoming very defensive. Remember when Reagan bombed Quaddafi? He said 'After seeing Rambo, I know what to do.' And then Saddam used it in his bunker. He said 'This is not Rambo.' Can you imagine? It became synonymous with a mindset. I became a…symbol. I was always worried when I traveled abroad. There were always a lot of threats. When I went to Cannes they said I'd be dead. When I would go to third world countries, it was not so pretty." (Weinraub1993, C1) Stallone's amazement stemmed from how a character he played while working in the dream factory of Hollywood – avenging Vietnam veteran John Rambo – became a worldwide symbol of the Reagan administration's hawkish military initiatives in Afghanistan, the Middle East, and Central America.

While Stallone's apprehension was certainly merited, the hostile reception accorded the star abroad was ironic because of the global popularity of his movies. Equally bewildering was that the *Rocky* and *Rambo* movies became so popular despite their vilification of non-white peoples and governments as racial and ethnic "others" whose material and moral progress could only be facilitated through their assimilation of the Protestant success ethic. That these works achieved global popularity is ironic but entirely comprehensible given the role Hollywood movies historically have played in socializing people of diverse backgrounds into consumers of American culture.

However,

The first section contends that Hollywood's vertical and horizontal reintegration during the Reagan presidency enabled it to act as a cartel abroad in its dealings with film industries in other nations, particularly through its domination of new media such as videocassette and cable television. Reagan argued that the liberation of investment capital through tax cuts would free the rogue entrepreneur to revitalize the economy through aggressive investment in new business opportunities, including cable television, which Reagan aggressively cultivated through deregulation. In actuality, the integration of

Hollywood's major studios into tightly diversified transnational corporations enabled the industry to pour profits from multiple domestic revenue streams into aggressively cultivating markets for ancillary forms of movie consumption and privatizing and commercializing public communications systems abroad amidst an era of increasing globalization.

Reagan's roll-back of corporate taxes and anti-trust laws and his use of military might prodded foreign governments to privatize their telecommunications and manufacturing industries and open their markets to U.S. firms under the auspices of promoting global economic development. The integration of the movies into a mushrooming, worldwide media culture of entertainment raises key concerns about the commodification of culture during the 1980s. The contradiction that emerges from treating ideas as economic goods to be bought and sold in a free and open marketplace of ideas is that the private sector's relentless search for new markets and greater profits does not serve the public interest. Far from promoting a free and open debate about the distribution of economic and cultural resources, the communications industry sought during the 1980s to produce culture first and foremost as a commodity designed to maximize the efficiency of large-scale movie production, distribution, and consumption.

The second section studies how the Reagan administration's treatment of culture as a commodity rather than an institution with the responsibility of ensuring the robust exchange of ideas shaped Hollywood's blockbuster mode of production. Robert C. Allen et. al, define the term "mode of production" as "the reasons for the making of the film, division of production tasks, technology employed, delegation of responsibility and control, and criteria for evaluating the finished film." (1985, 86) As Thomas Schatz (1993) argues, the success of *Jaws* (1975; $260 million) consolidated industrial trends and practices around the blockbuster. *Jaws* exemplified the blockbuster because of its pre-sold appeal as a best-selling novel, the potential of it as a summer hit, its reiterability in other media forms, and director Steven Spielberg's emerging superstar status. The advent of this blockbuster mode of production augured Hollywood's vertical and horizontal integration during the 1980s, its aggressive expansion into communications media such as satellite and cable television, and its use of television shows to launch movie stars.

Hollywood's embrace of high concept as a moviemaking strategy during the 1980s encouraged the reiteration of *Rocky III*'s buddy plot in other movies, including *An Officer and a Gentleman* (1981; $129.7 million), *48 Hrs*. (1982; $75.9 million), *The Toy* (1982; $50.2 million) *Trading Places* (1983; $90.4 million), *Places in the Heart* (1984; $34.7 million), *Brewster's Millions* (1985; $38.8 million), *Lethal Weapon* (1987; $65.2 million), *Field of Dreams*, (1989; $64.4 million), and *Driving Miss Daisy* (1989; $106.5 million). The box-office success of these movies indicated that the formula could appeal to multiple audiences through its resituation in the altered generic context of a family melodrama, a screwball comedy, or a war movie.[2]

Hollywood's focus on biracial buddy movies during the 1980s sprang from the need to produce large audiences by limiting diversity and innovation. Conversely, some degree of diversity and innovation was necessary to continue attract smaller audiences. (Hollows 1995) The industry's system of blockbuster, A-list, and low-budget moviemaking proved well suited to balancing these objectives. By making blockbusters (*Beverly Hills Cop, 1984*), A-list star vehicles with sleeper hit potential (*Trading Places, 1983*), and low-budget offerings for cult audiences (*Do the Right Thing*), Hollywood identified, promoted, and rewarded aspects of racial and class diversity that could be profitably marketed to both worldwide audiences and small niche markets. As an A-list star vehicle, *Trading Places* played a vital research and development role in Paramount's decision to sign Eddie Murphy to an exclusive $15 million, five-picture contract and cast him as the lead in the blockbuster *Beverly Hills Cop* (1984). While risking huge sums on festive spectacles like *Beverly Hills Cop*, Paramount conversely attempted to censor *Do the Right Thing* by refusing to finance the film unless director Spike Lee changed its controversial final scene, during which a riot erupts between blacks and whites in a Brooklyn neighborhood. When Lee refused to relinquish final-cut approval, the studio decided not to finance the film. (Watkins 116)

Hollywood's differing allocations of industry resources to *Beverly Hills Cop* and *Do the Right Thing* is explainable on the basis of these movies' differing treatments of race and class relations and the success ethic. Robin Wood (1986a) insightfully observes that classical Hollywood cinema embodies success ideologies such as the right of private enterprise, the moral excellence of work, marriage, and the achievement of wealth. He also traces how between the early 1970s and early 1980s Hollywood sought to contain contradictions within success ideology through its gravitation away from low-budget cult films such as *The Texas Chainsaw Massacre* (1973) and towards big-budget blockbusters such as *Raiders of the Lost Ark* (1981).

Like *Raiders of the Lost Ark*, biracial buddy movies such as *Rocky III* focus on the definition of property rights and the proper distribution of wealth by establishing moral and economic boundaries between the values of white civilization and racial and ethnic others who threaten it. They conflate the formation of interracial bonds between surrogate family members with the overthrow of corrupt political and economic elites who threaten a self-regulating free market's distribution of economic rewards on the basis of hard work and moral deservedness. Conversely, low-budget offerings such as *Do the Right Thing* openly recognize contradictions in 1980s race and class ideology through their deviation from classical Hollywood style and insistent refusal of narrative closure. Incumbent in Hollywood's devotion of its capital to blockbusters and its marginalization of low-budget movies was an agenda of using economies of scale in moviemaking to maximize the profitability of movies such as *Rocky III* rather than promote a robust debate about the Protestant success ethic.

The Political Economy of Reagan-Era Hollywood

Political economic theory provides a framework for analyzing how capitalism's relentless search for economic returns drives the transnational corporation's mobilization of citizens as consumers. As David Harvey observes, "precisely because capitalism is expansionary and imperialistic, cultural life in more and more areas gets brought within the grasp of the cash nexus and the logic of capital circulation." Hollywood's structural transformation during the1980s provides a salient example of this "logic of capital." (1989, 344)

The Protestant success ethic condones this expansionary tendency under the rubric of promoting a self-regulating marketplace of economic production and consumption in which the entrepreneur's pursuit of enlightened self-interest serves the common good by creating jobs and implementing innovations that make goods more affordable and widely available. Emily S. Rosenberg (1982) argues that this philosophy of "liberal-developmentalism" guided America's mission of global economic development during the 20th century. Aspects of this ideology include the belief that other nations can and should follow America's model of free-market economic development; that this objective can best be achieved through free and open access for trade and investment; and that government should stimulate and regulate American participation in international economic and cultural exchange. The belief that ideas should also flow freely across nation-state borders relates closely to the ideal of free trade. In fact, liberal-developmentalists assume that one free marketplace is a necessary condition for the other. Free flow is also largely defined as the absence of governmental control.

As a Cold War conservative activist and movie industry spokesman, Ronald Reagan had long endorsed Hollywood's exportation of the American dream as a tool for propagating global capitalism. Aligning his presidency with this platform, Reagan pitched his program of tax cuts and deregulation as a means of making industry rather than government the engine of economic prosperity in the wake of the recessionary conditions of the 1970s. Reagan's revision of federal tax law, including the 1981 Economic Recovery Tax Act, created an investment climate highly conducive to the interests of communications company owners and stockholders. The overwhelming majority of the tax reductions resulting from the cut enacted by Reagan went to capital-intensive businesses. Cuts in corporate income taxes were made possible by a provision that allowed corporation buyers to deduct from their taxes interest paid on borrowed money.

Reagan's economic reforms provided a direct impetus for Hollywood's global expansion during the1980s. The tax savings provided by these measures freed up tremendous amounts of investment capital for transnational conglomerates involved in diversifying their media interests through acquisitions and takeovers. The act also provided an enormous boon to banks and investors earning interest on the borrowing of multi-media conglomerates. Thus, a compliant state that overlooked antitrust laws, accelerated the deregulation of broadcasting and other major industries, and championed unrestrained market competition as an economic and social panacea proved pivotal in the makeover of Hollywood into a vertically and horizontally integrated industry with global reach.

With the exception of Radio-Keith-Orpheum (RKO), which ceased movie production in 1948, four of the "big five" studios (Warner Bros., Paramount, Loew's/Metro-Goldwyn Mayer (MGM), Fox/20th Century-Fox) and all of the "little three" studios (Universal, Columbia, and United Artists) that historically have controlled filmed entertainment production and distribution were assimilated over the 1980s into tightly diversified transnational conglomerates with interlocking interests in multiplex theaters, cable television, videocassette distribution, and network television. While the development of cable television and videocassette offered the potential to undermine the market power of the major filmed entertainment studios, these technologies were instead integrated into media conglomerates that developed them into lucrative pipelines for their studios' latest A-list and blockbuster releases designed to offset the financial risk of making ever more costly movies. Under Reaganomics and deregulation, existing concentrations of ownership tightened further, ensuring that revenues from multiple interrelated media subsidiaries flowed into a single company's coffers.

Reagan promoted free trade as a means of promoting democratic relations between nations, even though transnational corporations rather than governments increasingly governed trade relations. While the Hollywood movie is quintessentially American, Warner Bros., Paramount Communications, and News Corporation are nonetheless international entertainment cartels. Masao Miyoshi explains the distinction between a multinational corporation and a transnational corporation in order to argue that a borderless global economy has emerged in recent decades. The multinational corporation is headquartered in a single nation though its operations are decentralized in a number of countries, its managerial employees hail from its native country, and it aligns its interests with those of its home nation. A transnational corporation, however, is "adrift and mobile" rather than tied to its nation of origin, and its global pervasiveness positions it to settle anywhere and exploit any state, including its own, as long as the liaison promotes its own interest. (1994,147)

While the transnational corporation maintained a global presence during the post-war era, it achieved greater prominence during the 1980s under Reaganomics and the Federal Communications Commission's (FCC) treatment of the media as a market-driven commodity rather than an educational tool. Reagan's belief that tax cuts for business and individuals would enable business leaders to create new jobs was complemented by the conviction that government regulation of industry imposed unnecessary restrictions on business efficiency. Freeing business of cumbersome restrictions on cross-industry forms of ownership would provide consumers with greater choice by promoting the cultivation of new communications technologies, including videocassette, cable television, and satellite, the commission promised.

Describing television as a toaster with pictures rather than a mass medium with a responsibility to promote constructive cultural dialogue, the FCC undermined broadcasters' traditional fiduciary responsibility over the public airwaves by implementing policies that made market forces rather than government the overseer of broadcast content. *Broadcasting* portrayed Ted Turner as a populist David battling the Goliaths of network television, proclaiming that Congress and the FCC would "go for the people and cable, because they're for more voices. They're not for the monopolies." (Rebel with a cause,1980)

Reagan capitalized on this populist rhetoric by arguing that the rise of new technologies such as cable television promised to end spectrum scarcity by democratizing access to the broadcast airwaves. Incumbent in this scenario was a conflation of entrepreneurial investment in new communications technologies and the recrudescence of a mythical frontier from which the self-styled entrepreneur extracts new wealth. As Garry Wills (1987) observes, supply-side economics conflated the resurrection of a culture of frontier individualism and freedom from government regulation with a return to values that made America great. Opponents of this characterization of the broadcast spectrum as a limitless frontier warned that supply-side economics and deregulation would create an "orbital OPEC" in which the power to buy a satellite or lease transmission time would be limited to a handful of large companies. (Bierbaum1982, 36) This proved to be the case as the Reagan administration's relaxation of restrictions on patterns of ownership within the broadcast industry facilitated the colonization of satellite-based media such as cable and network television by conglomerates such as News Corporation, Paramount, and Disney.

In 1984, for example, the FCC raised the number of television stations a single company could own (allowing for the purchase of up to 12 stations so long as the combined audience doesn't exceed 25 percent of the nation's TV households) and shortened the length of time an owner had to retain a station before selling it. (FCC Okays1984) Recognizing the synergies to be gained through cooperation, the cable and filmed entertainment industries fostered cross-ownerships through movie studio investment in basic cable services and negotiated contracts which provided cable with exclusive access to Hollywood's latest hits (Hilmes1990) The FCC's refusal to repeal the Financial Interest and Syndication Rule in 1980 also enabled the major studios to retain the profits generated by the televised exhibition of their movies and television shows over their own networks. The "fin-syn" rule was introduced during the early 1970s and halted the network practice of retaining financial interest in and/or distribution rights over independently produced programs aired by them. The Prime Time Access Rule (PTAR) also forced the networks to open up one hour of prime time programming each evening for their affiliates to fill with their choice of programs. The rule increased the demand for syndicated series and movies and provided an additional incentive for studios to focus their efforts on television production. (Schatz1993)

Lax enforcement of anti-trust laws enabled the major conglomerates to complement their cable and broadcast television outlets with first-run theater chains. Douglas Gomery (1989) writes that the Justice Department challenged only 0.7 percent of the mergers between 1982 and 1986 in which the parties were required to file for antitrust approval. The Carter administration maintained a 2.5 percent rate of challenge. With their purchase of first-run exhibition chains in large urban areas, the major studios reconnected the profitable link between filmed entertainment production, distribution, and exhibition severed by the studio's forced sale of their exhibition sites under the1948 Paramount decree. New York theater exhibitors pushed for full retention of the decree by arguing in *Variety* that distributors would "position themselves to skim the largest theatrical gross receipts off movies through control or ownership of key theaters in dense markets around the country, and eliminate all other runs, turning to television and home entertainment markets for the balance of their funds" ('Consent' as small,1982,1).

This is precisely what happened under Reaganomics and deregulation as investors spent more than $12 billion between 1985 and 1988 to purchase theater chains, cable franchises, television networks and independent chains, and videocassette distributors in the United States and integrate them into vertically and horizontally integrated structures. With media properties in every major market of the English-speaking world, Rupert Murdoch's News Corporation was termed by the *Washington Post* "the prototypical worldwide media empire." (Farhi 1988, H1) Components of Murdoch's company include the Twentieth Century Fox film and television studio, a chain of independent TV stations, various print publications, and a satellite channel that boasted 500,000 subscribers in Norway, Finland, Switzerland, France, West Germany, and Austria upon its launch in 1984. (Pitman 1984) *Variety* observed that the Sky Channel's subscriber base a year later totaled 2,400,000 "with the numbers sometimes jumping abruptly when a new country's cable system signs on." (Sky Channel Sked, 1985, 132)

Programming on the Sky channel bore a remarkable similarity to the fare on independent stations in the U.S. because of its heavy reliance on Hollywood studio library television shows and movies. (Sky Channel Sked1985) Independent television stations, which tripled in number between 1975 and 1985, relied heavily on packages of theatrical films from MCA TV, MGM/UA, Orion, and Columbia after networks began shunning them because of their prices, limited ratings potential, and pay-TV exposure. More significantly, independent television station groups (including Murdoch's Metromedia chain) began partnering to launch joint programming efforts or get a first run show off the ground, resulting in the formation of alliances between media conglomerates such as Viacom and independent television station chains such as Tribune. (Loftus1985)

Through Cinema International Corp. (CIC), a Dutch-based consortium formed in 1970 by Paramount and MGM (later joined by Universal), the major studios achieved further market hegemony in their dealings with European film industries by acting as a cartel during the 1980s. In 1982, Canada, France, West Germany, and Japan were Hollywood's largest overseas markets. (Guild, CIC video preps1984) CIC enjoyed a 32 percent increase in box-office revenues in France between 1980 and 1982, largely on the basis of the success of *Raiders of the Lost Ark*. (Summer a sizzler1981) The major studios also acted as cartels in assembling pay-television partnerships country by country across Europe. Premiere International, one of two main players in the effort to assemble such partnerships, forged a deal between 20th Century Fox, Warner Bros., Columbia Pictures, HBO, and Showtime-The Movie Channel and the British companies Thorn-EMI and

Goldcrest Productions. The other player, UIP, represented Universal, Paramount, and MGM in negotiating similar deals with overseas nations. (Michie 1985)

Nation-state boundaries became increasingly meaningless in this global system, particularly in Western Europe where the formation of a common market in 1992 created a market of over 320 million people without cultural or economic borders. (Flint 1992) As Europe evolved into a single market, Hollywood strove to make movies with appeal to a broad swath of moviegoers in different countries. The industry's growing dependence on the international investment community for blockbuster production capital encouraged its gravitation towards action-adventure movies with lavish production values, leading the *Wall Street Journal* to observe that "foreign financiers will take a chance on 'Universal Soldier' or other movies with a 'studio' feel to them, but they have turned their backs on some of the more interesting, smaller movies that added so much diversity to movie-making in the past." (Turner 1993, R1) Hollywood's dependence on international investment partnerships during a period of rising costs and global distribution and its effort to appeal to an increasingly global audience of borderless nations marginalized movies that could not be sold on a worldwide basis.

While Hollywood historically has engineered synergies between movies, television, music, and radio, never before the 1980s had movies been designed from their inception so thoroughly with cross-marketing and overseas audiences in mind. The soaring budgets of 1980s movies were responsible for this focus on marketplace tastes because they created the need for greater and greater profits in a period of upwardly spiraling costs for talent, saturation release, advertising, and promotional blitzes. The *New York Times* observed in 1987, for example, that the cost of a movie made by a major studio rose from $2.3 million in 1975, to $17.5 million in 1986, with marketing expenses averaging $7.5 million. *Rocky IV* (1985) and *Brewster's Millions* (1985) exemplified this trend with estimated budgets of $25 million and $15 million, respectively. (Upcoming 1985 Big-Buck 1984) Under these conditions, the average movie did not turn a profit until it earned $30 million in theatrical rentals. (Harmetz1987) The industry-wide cost of release prints topped the $80 million mark as saturation release patterns necessitated wider print runs. (Cohn, Film costs1984)

Hollywood's hunger for the megaprofits that only the blockbuster could yield increased the industry's reliance on key stars, driving up the cost of talent and resulting in greater and greater sums being spent on fewer and fewer movies at the most visible and lucrative level of production and distribution. The amount spent on stars stemmed from their pivotal role in serving as human collateral for raising production money. Amidst the rising cost of making movies, stars with proven box-office appeal became invaluable in securing financing for big-budget movies. Sylvester Stallone, for example, received a $16 million guarantee to star in *Rambo III* before Golan-Globus shelved the movie. (Frank et. al 1987) During the late 1980s, Eddie Murphy and Arnold Schwarzenegger each received approximately $8 million per movie. (Jowett et. al1989)

The cost of shouldering big-budget movies led the studios to strike partnerships. According to *Variety*, for example, Columbia limited its exposure on *The Toy* through a pre-buy deal with HBO that provided 25 percent of the film's budget of $25 million. (Cohn, Stabilizing trend,1982) The practice of partnering flourished amidst these rising costs as Hollywood's seven major studios sought to limit risk by co-financing movies with each other. Recalling the studio era, splitting risk in this fashion resurrected the collusive practices the studios used to supply each other's screens and eliminate competition during the 1930s and 1940s. Through such a practice, the studios virtually guaranteed that the budgets for both production and marketing became so high that no one else could possibly compete, raising barriers of entry at the most lucrative and visible level of the business. The industry's dependence on big-budget partners intensified in 1985 when Reagan's repeal of the investment tax credit eliminated all but the best-capitalized investors from the field of potential financiers. (Hollinger Tax reform clouds, 1985) Independent distributors Lorimar, Cannon, Tri-Star, New World, Atlantic, DeLaurentis, Vestron, Film Dallas, Island Alive, and a half-dozen smaller companies went bankrupt or were reorganized and bought by a larger competitor as the international investment community's focus on movies with big stars and lavish production values marginalized movies made by these companies.

Given the skyrocketing cost of making movies during the 1980s, distributors sought to maximize audience size and recoup their costs as quickly as possible, placing an increasing emphasis on promotion within the filmed entertainment industry's practices. According to Norman Levy, president of 20th Century Fox Entertainment, movie marketing costs rose 50 percent between 1979 and 1984. (Hollinger Costs way up, 1984) The amounts spent on advertising and marketing stemmed from the cost of promoting movies in a global marketplace in which concentrations of ownership within the advertising industry forced Hollywood to deal with a few major companies. In 1989, the world's largest agency, Saatchi & Saatchi of London, had offices in eighty countries and bought 20 percent of the world's broadcast commercials, for clients like Proctor & Gamble. (Bagdikian 1989, 805) The integration of communications and information systems into global communications conglomerates made it feasible to circulate movies and attendant Hollywood culture throughout a worldwide entertainment marketplace with greater speed. "Capitalizing on publicity in Los Angeles can often lead to higher grosses in Melbourne," the *Wall Street Journal* observed. (King 1993, R9)

The further integration of movies during the 1980s into a global entertainment marketplace drove demand for both ancillary media such as videocassettes and cable television and recruited new audiences abroad. In 1987, exports of U.S. television programming yielded $500 million, motion pictures $1.2 billion, videocassette recordings, $1.8 billion, and music recordings $1.4 billion. In contrast, in 1987 the entire world exported less than $400 million worth of recorded music and feature films to the U.S. (Frank *et al* 1987,120) The reliance of European film industries on American movies for subsidization compounded this trade imbalance. Under German Federal Film Board funding, for example, a few pennies of every movie ticket were contributed to a subsidy budget to be spent on German-made movies. With U.S. product accounting for two-thirds of ticket sales in 1984, the German film industry relied heavily on Hollywood movies for production financing. (Guild Yanc distribs account, 1984)

The staggering budgets devoted to producing, distributing, and exhibiting Hollywood blockbuster movies on a global basis during the 1980s thus resulted in the uneven development of international media markets and consumer desires both in America and abroad, raising concerns about the viability of indigenous film industries amidst Hollywood's construction of a homogenizing culture of movie consumption. (Stenger 1997) In these ways, movies of the 1980s arguably broke down resistance to late capitalism's agenda of socializing citizens of developing countries into corporate laborers and consumers in a global marketplace of production and consumption.[3]

Thomas Schatz contends that the profitability of the major media conglomerates' filmed entertainment divisions positioned them to determine not only the agendas of their parent companies, but "the very nature" of the media content they distribute, leading to the concern that their goal of creating a global media culture of consumers united by rituals of entertainment and consumption would factor out the concerns of a larger public that could not afford to consume. (1997, 101) This leads to a series of key questions. Does a contradiction arise from expecting the media marketplace to work in the public interest while entrusting responsibility for this to private, profit-driven interests? If so, what are the consequences of treating ideas as economic goods to be bought and sold? (Jhally 1989)

Stars, Blockbusters, and the Global Market

Hollywood's strategy of matching movie budgets with audience spending power and size exemplifies how it increasingly sought to address the public as consumption communities during the 1980s. Movies function ideologically within a system of commodity production and consumption by integrating the individual into a larger web of social relations defined on the basis of similar tastes. As Douglas Kellner (1995, 41) observes, the logic of capital pushes the free market to multiply markets, styles, fads, and artifacts to keep absorbing consumers into practices and lifestyles that can be packaged and sold for profit. The valorization of "difference" as a fashion style often trivializes resistance, as the fashion and pop culture industries' marketing of hip-hop culture proves, posing the threat of nullifying oppositional politics if it is not adequately appraised.

Hollywood's financial recovery from near-bankruptcy in the late 1960s pivoted on its adoption of a mode of production that maximized cost and marketing efficiencies by matching audience demand and movie budgets. The system of blockbuster, A-list, and low-budget movie production that arose in the wake of *Jaws* proved highly effective in enabling Hollywood to better match audience demand and movie budgets. This goal became crucial as the industry increasingly depended during the1980s on overseas box-office revenues to spread the risk of blockbuster filmmaking. The need to attract broad audiences discouraged diversity and innovation, resulting in Hollywood's return to longstanding genres such as the biracial buddy movie. *Rocky III* (along with *ET: The Extraterrestrial*) accounted for a whopping 25 percent of the approximately $1.4 billion in U.S.-Canadian ticket sales during the summer, 1982 movie season, while another 25 percent of the market was split between six contenders that included *An Officer and a Gentleman*. (*ET*, *Rocky III* took 25%, 1982, 3) Domestic box-office receipts steadily increased during the 1980s from $3 billion to $5 billion. (Schatz, 1997, 83)

The makeover of Hollywood into vertically and horizontally integrated transnational communications conglomerates under Reaganomics and deregulation privileged the blockbuster because of its ability to promote marketplace synergies between movies and ancillary media. *Variety* observed one month after the release of *Beverly Hills Cop* (1984) in almost 2,000 theaters that it had captured more than 21 percent of the market and more revenue than the combined gross of the next five most popular movies. (Murphy, 1985, 3) The publicity that arose from *Beverly Hills Cop*'s record-breaking box-office receipts in turn generated huge demand for it as a videocassette. The success of franchises such as *Beverly Hills Cop* resulted in the eclipse of box-office revenues in 1986 by prerecorded videocassette revenues, $1.67 billion and $2.16 billion, respectively, in the United States and Canada for the first time. (Harmetz 1987, 1)

The success of selling videos on a retail basis depended on a strategy of volume discounting and a focus on blockbuster titles that forced small video distributors to rely on the major studios. Paramount, for example, offered video store retailers a "25/25" sales event in the fall of 1984 in which 25 titles, led by *Raiders of the Lost Ark*, were put on sale at a suggested price of $24.95, spurring sales of over 1 million cassettes. (Greenberg 1986, 1) *Variety* attributed a 30 percent jump in videocassette rentals and purchases in 1987 mostly to a surge in sell-through sales, noting that the higher distribution costs and thinner margins of the sell-though business forced the industry towards "leaner, more savvy operations than what worked during the rental-dominated days," resulting in smaller companies "taking it on the chin." (Homevideo had a spotty 1987,1988)

Through CIC, Paramount and Universal formed a joint venture with Victor Co. of Japan in 1984 to rent and sell videocassettes in Japan. (CIC, Japan Victor, 1984, 39) CIC enjoyed a similar partnership in West Germany with Taurus Video, handling about 17% of the country's videocassette sales during the early 1980s. (Guild, Yank distribs account, 338) CBS/Fox also became one of the biggest distributors in England by establishing ties with VCL Video, a major British home video distributor. While the annual growth of the U.S. videocassette market was only about 20-25 percent during the early 1980s, it grew 120 percent overseas in 1982. (US majors off to slow start,1984) "This is the way to go, with majors taking on the indies," VCL president Alan Judd observed. "Either that or go out of business." (Baker 1984, 43)

While the industry sought through its focus on the biracial buddy movie to limit innovation and diversity, it simultaneously pursued innovation and diversity by distributing "small" movies made in the United States and abroad. In picking up a foreign movie for domestic distribution, Hollywood often marketed and packaged it in order to broaden its appeal to American audiences. According to the *Los Angeles Times*, the Australian-made *Crocodile Dundee* (1986; $175 million) did "make it big here, but only because Hollywood repackaged it." Indeed, *Crocodile Dundee* was originally an "ocker" comedy that celebrates a specific working-class, populist definition of Australian national identity. The makeover of its script by Paramount into a *Beverly Hills Cop*-inspired, fish-out-of-water comedy about a legendary Australian crocodile hunter who cracks an international crime ring while doing a publicity tour in New York City widened its appeal but stripped it of cultural idiosyncrasy. (Flanagan, 1987,1) The industry practice of complementing the seasonal blockbuster with A-list star vehicles like *Crocodile Dundee* and low-budget movies designed to draw a cult audience spread the risk of blockbuster movies and provided a means of testing the popularity of stars of foreign cinema with American audiences.

While stars and genres have always been commodities, they became during he 1980s franchises designed to engage the entire structure of the vertically and horizontally integrated media conglomerate. As Dyer (1986a) observes, stars are human capital who contract their services on a monopoly basis to a studio. Stars with worldwide box-office appeal enjoyed the prerogative of forcing studios to spend huge amounts on vanity projects that promoted greater homogeneity in Hollywood's output and marginalized movies that lacked major stars and broad market appeal.

Over the objections of screenwriter Phil Alden Robinson, Twentieth Century Fox allowed Sylvester Stallone to rewrite *Rhinestone* (1984; $21.4 million) from a small movie about a strong-willed Southern woman (Dolly Parton) determined to own a restaurant in Manhattan into a *Rocky*-inspired tale of a New York City cab driver's miraculous victory in a country and western bar singing contest. Stallone's tinkering doubled the original movie's budget yet yielded a critical and commercial flop. (Easton, 1991) MGM-UA similarly allowed Stallone to incur dramatic overruns in the $17 million negative cost of *Rocky III*, which was "far in excess of earlier estimates" according to *Variety*. (Cohn, Film Costs Will Soar 1) However, Universal allowed Spike Lee final cut on *Do the Right Thing* only after cutting the film's budget from $10 million to $6.5 million. (Lee 1989, 87) Nonetheless, *Do the Right Thing* ($27.5 million) began to turn a profit by its second week in nationwide release, but limited distribution, and ultimately yielded substantial returns. It also received extensive press coverage and was the most talked about film of 1989. While Hollywood thus privileged biracial buddy movies because of their broad appeal, the industry sought to capitalize on the potential appeal of *Do the Right Thing* while also minimizing the risk of releasing it through tight cost control measures.

The importance of producing and releasing movies quickly in order to cover the immense overhead incurred by egocentric stars, distribution, and marketing costs and the necessity of pre-selling stars and story premises to audiences explain the simplistic treatment of race and class relations in the *Rocky* movies in comparison to *Do the Right Thing*. Producer Lawrence Gordon pitched the story of *48 Hrs.* in May, 1983 to Paramount executive Michael Eisner on the basis of one sentence: "I told him it was a story about a rough white cop and slick black ex-convict who have 48 hours to solve a crime. He loved it and said, 'Let's do it…if we can get it into the theaters by Christmas." (How paramount keeps, 1984, 107)

The practice of using episodic television's highly encapsulated 30-minute program format as a template for movie storytelling and pre-selling stars to movie audiences lent 1980s genres and stars to criticisms of reproducing sameness, fixity, and the confirmation of existing identities, evoking the Frankfurt School's indictment of mass culture as a tool for promoting cultural standardization and mediocrity. Dyer (1986a) argues that the filmmaker determines much of the meaning an audience appropriates from a star through casting. Casting can be the most important choice in the filmmaker's construction of character because proper judgment can mobilize all the meanings carried by a particular star and inject them into the representation of the star onscreen. The use of television as a forum for pre-selling stars to movie audiences limited the roles in which they were cast. Audience familiarity with Eddie Murphy as the only black cast member of the NBC television comedy show *Saturday Night Live* governed the decision to cast the star opposite fellow cast member Dan Ackroyd in *Trading Places* and as the only black in a white police department in *Beverly Hills Cop*.

Justin Wyatt's (1994, 55) observation that high concept movies of the 1980s rely on contrasts in physical type between characters to pre-sell a story premise is also instructive. Casting characters on the basis of physical type rather than expository traits became increasingly important as high concept's marketing-driven approach to movie making stressed the importance of being able to encapsulate a story premise in a single promotional image. Racial and class difference, for example, serve as the conceptual premise of the promotional poster for *Beverly Hills Cop* II, in which Eddie Murphy, looking like a street hustler in a Detroit Lions sports jacket and a gun across his chest, leans against a sign that reads "Beverly Hills," palm trees and expensive real estate lining the street behind him.

Television, A-list movies, and blockbusters became successive rungs on a ladder designed to spread risk and upsize or downsize stars and genres and to promote synergies between media, leading critics to complain that television style had reshaped movies into depthless spectacles. Movies of the 1980s, Mark Crispin Miller argues, foregrounded action and adhered to a carefully coordinated total look, "as if they'd been designed rather than directed." (1990, 202) Crowded with interludes of visual excess such as violent shoot-outs, car chases, and brief comedy routines, *Beverly Hills Cop*'s modular structure allowed it to be reiterated as a theatrical trailer, a music video, a 15-second television advertising spot, and a print advertising campaign. This modular structure in turn resulted in the movie's design as a series of loosely connected "bits" during which Murphy performs his stand-up comedy routine on the big screen.

Originally written for Sylvester Stallone, *Beverly Hills Cop* is also a cops-and-robbers buddy movie that celebrates the conservative backlash against New Deal and Great Society liberalism popularized by Reagan during the 1980s. While conflating law and order interracial harmony, police camaraderie, and a celebration of family, the biracial buddy movie simultaneously recognizes the threat to these values posed by terrorists, drug traffickers, and other hostile forces often constructed as racial and ethnic others. While the biracial buddy movie's immediately recognizable premise and the massive amounts spent to promote it and release it on a saturation basis proved integral to its commercial success, its popularity also stemmed from its ideological appeal to audiences during the Reagan era.

The Ideological Recuperation of the Protestant Success Ethic

While Hollywood's mode of production matched audiences with budgets, it also sought to appeal to audiences through its incorporation of recurrent themes, generic conventions, and value-laden narratives that coalesced amidst the Reagan-led backlash against New Deal economics and counter cultural liberalism. Semiotics provides one methodological basis for exploring the role of the audience in popularizing differing ideological treatments of these themes. Ferdinand de Saussure's belief that language provides a master pattern for cultural signification explains how movie stars and genres can be studied as sign systems.

As Thomas Schatz (1981, 19) observes, the "grammar" of film genres has been refined over time through the "conversation" between audiences and filmmaker that takes place through the closed loop of box-office "feedback." This conversation between audiences and studios shapes the plots, settings, characterizations, and iconography of popular genres over time into a mutually understood set of signs, investing movies with a social function of dramatizing and negotiating political and social ideologies and playing it both ways by criticizing and reinforcing prevailing values. Ultimately, the success of a genre depends on its effectiveness in dramatizing recurrent cultural themes and adjusting to the audience and filmmakers' changing attitudes towards them.

As Dyer (1986a, 6) suggests, the popularity of specific stars also stems from their embodiment of race and class relations under capitalism. He argues that stars "are part of the labour that produces film as a commodity that can be sold for profit in the marketplace" and are thus "examples of the way people live their relation to production in capitalist society." Stars thus drive demand for leisure culture goods by both promoting their movies and modeling the lifestyle to which their movies promise entry. Particularly as developed in the star system, the success myth tries to orchestrate several contradictory elements: that the star is both a product of the masses, yet talented and special, and that breaks which may happen to anyone typify the route to stardom, even though hard work and professionalism are indispensable to achieve star status. (Dyer 1986b, 48)

The contradictions between the success mythology Reagan espoused and the actual effects of his administration's retreat from business regulation resulted in tensions in race and class relations during the 1980s. The deregulation of satellite communication made it feasible to coordinate worldwide systems of economic production and consumption that weakened union power and enabled employers to push more flexible work regimes and labor contracts on a workforce rendered vulnerable by the wholesale exportation of manufacturing jobs to cheaper overseas labor sources. The implementation of such measures resulted in the rise of a three tiered labor market which has in the years since Reagan's departure from office become the norm with the replacement of a Fordist economy of heavy manufacturing by a post-Fordist service economy of "flexible" labor relations. Such a system renders women and people of color particularly vulnerable to conditions of part-time employment and exploitation as a surplus labor pool. (Harvey 1989, 152)

The profitability of the biracial buddy movie suggests that its stars and its conformity to recognizable generic parameters resonated with a broad cross-section of moviegoers amidst these economic and cultural conditions. Audiences also proved receptive to hip-hop movies like *Boyz N the Hood* (1991: $57 million) that invoked the familiar conventions of the gangster and blaxploitation genres. However, popular reception of movies that fell outside recognizable generic boundaries such as *Do the Right Thing*) was more lukewarm, albeit nonetheless profitable. In writing about his frustrations in making *Malcolm X* (1992), Spike Lee (1992, 11) blames the studios for his films' relatively modest revenues because "they have no respect for the buying power of the black market" and because "to this day I've never had a film that's been in as many as one thousand theaters."

However, audience reception of Lee's films also impacted their profitability. Ironically, Lee's gravitation towards the commercial mainstream while incurring press for his criticism of the studios subjected him to the African-American community's demand that he correct this form of "negative" black imagery. As S. Craig Watkins (1998, 118) observes, the African-American community's censorship of black media images by other African Americans stems from the group's assimilation of middle-class success norms of respectability that stress the importance of producing "positive" images that conform to notions of bourgeois respectability such as Roger Murtaugh in *Lethal Weapon.*

Lee's attempt to climb from the specialty film *Do the Right Thing* to the blockbuster *Malcolm X* also overreached the director's market potential. While *Malcolm X* has garnered substantial grosses of $48.2 million since its release a decade ago, its relatively lethargic earnings of $2 million during its final nine weeks of theatrical exhibition failed to yield the receipts Hollywood required to consider a blockbuster commercially successful. Watkins (1998,132) thus concludes "while Lee's market potential is strong, it continues to remain concentrated."

Instead, audiences were most receptive to stars and genres that embodied and dramatized Reagan's claim that American was a colorblind society in which black and white mobility depended upon the assimilation of middle-class values of moral self-discipline and economic self-help. Sylvester Stallone cannily conflated his own story of rags-to-riches struggle in Hollywood in *The Official Rocky Scrapbook* (1977) with Rocky's second-chance shot at self-respect and economic mobility. Much was made during the time of *Rocky*'s release of Stallone's tenacious refusal to relinquish creative control over its script (a product of his labor) to the studios. *Parade* magazine similarly characterized Bruce Willis, star of the biracial buddy movie *Die Hard* (1988), as an ambitious college dropout who escaped a job as a "lifer" at a DuPont chemical plant in the blue-collar town of Carney's Point, New Jersey by beating out 3,000 other Hollywood hopefuls for the role of David Addison, a wisecracking, cocksure detective, on the1980s television series *Moonlighting*. (Rader, 2002, 7)

The press similarly constructed *Lethal Weapon* star Mel Gibson as a morally and economically grounded family man who successfully balanced a demanding career and the roles of husband and father. Reports of drunken escapades that landed the actor in jail during the making of *Mrs. Soffel* (1984) revealed a rebellious penchant for wild behavior that fit well with his role as vigilante police detective Martin Riggs in *Lethal Weapon* (1987). However, the *Los Angeles Times* reported in 1988 that Gibson leased a $5 million compound in Malibu while making *Lethal Weapon* 2 in order to remain close to his wife and five children, from whom he had had to be away more than once while making previous movies. (Ryon, 1988,1) The actor's announcement while promoting *Lethal Weapon* 2 that he had quit drinking "because it makes such a difference in the quality of your work" foregrounded Gibson's bid to be taken seriously as a director, an accolade he subsequently achieved with his direction of *The Man Without a Face* (1993) and *Braveheart* (1995), for which he won a Best Director Academy award. (Mietkiewicz 1989, C1) Publicity about Gibson thus constructed him as a model of moral self-discipline whose ability to balance the roles of husband, father, and provider served as a cornerstone of the work ethic that elevated him to stardom.

While Hollywood constructed Stallone, Willis, and Gibson as products of economic self-help and moral self-discipline in an era of conservative backlash against New Deal liberalism and 1960s counter cultural excess, it promoted Eddie Murphy as a symbol of black economic and moral self-help in an era of post-Civil Rights racial equality. The *Chicago Tribune* noted that Murphy had grown up and directly benefited from the Great Society programs of the 1960s as a resident of a predominantly black, middle-class suburb Roosevelt, Long Island. It noted that "what Americans of all sorts detect in Murphy's humor is a man who is saying that, for him, race is no longer a burden or even an issue but something to be toyed with -- another 'fun' choice on the lifestyle menu that one may dig or not, as the mood takes you." (Kart1985, C8)

Murphy's disciplined upbringing as the stepson of a New York City transit police officer and his widely reported abstinence from drugs and alcohol despite the intense pressures of fame aligned the star with the neoconservative contention that moral self-discipline was the foundation of black middle-class mobility. As Dyer (1986b) observes, however, the star is the "complex totality" of multiple, sometimes conflicting, meanings. Thus, a studio executive's off-color observation in *Forbes* magazine that "Eddie Murphy is the last slave in Hollywood" recognized the tension between the actor's multi-million contract with Paramount and the stereotypical predictability of the roles he played in *48 Hrs.*, *Trading Places*, and *Beverly Hills Cop*. (Frank et al 1987, 101)

While publicity constructed Murphy as a celebrant of post-Civil Rights era racial equality, it characterized Danny Glover as a former 1960s political activist and agitprop theater group member who had by the mid-1980s settled into middle-class family life as a husband and the father of a teenage daughter. Looking back on his days as a student at San Francisco State University and a member of the Black Panthers, Glover told Gene Siskel in 1987 that "I had close friends who challenged the Black Panther Party line and ended up as dead meat. That could have been me. I had friends that took too many drugs and ended up wandering the streets in rags. That could have been me, too." (Siskel 1987, C6) Instead, Glover graduated from college and worked in various city and county jobs in San Francisco, specializing in housing and educational programs, before embracing acting full time at age 30 and making a successful transition from Broadway productions to movies.

While this description of Glover as a husband and father fit well with his role as Roger Murtaugh in *Lethal Weapon*, Glover's frustration with more stereotypical roles revealed a tension between his identities as actor and star. The actor distanced himself from his role as a cotton-picking drifter in *Places in the Heart* by observing that his grandparents in Georgia "laughed when they saw me picking cotton in 'Places in the Heart' because they knew I wasn't very good at it and because I was always afraid of the mule at their place." (Siskel 1987, C6) Incumbent in Glover's star persona was a tension between his role as a commodity designed to appeal to a crossover audience of whites and his frustration over being typecast in stereotypical roles.

A scene in *Lethal Weapon* 2 during which Murtaugh must endure the public humiliation of a police rescue because South African government operatives have wired an explosive to the toilet seat in his home reveals Glover reconciling the ambivalence he felt about playing the victim of racist oppression in such derogatory fashion. "The scene was not one of the things I found myself eager to do," he recounted while arguing that he derived his inspiration for it from a two-week jail stint for student activism on behalf of the Black Students Union during which he had to share a single toilet with other inmates. (Mietkiewicz 1989, C1) Recognizing the tension between his role as a brutal buck stereotype in *Rocky III* and the lure of sudden wealth and fame, Mr. T similarly declared that "I turned my chains into gold, so my statement is this: I wear gold chains instead of iron because I'm still a slave, but my price tag is higher." (Fiske 1987, 207)

Incumbent in the construction of these stars as symbols of the success myth was an attempt to conceal race and class contradictions in success mythology. While Hollywood cast Glover and Murphy in token roles in which they play thinly veiled "noble savages," their ascension to positions of wealth and influence in the movie industry affirmed the notion that America was during the1980s a colorblind society of fluid class mobility. Similarly, publicity that criticized Spike Lee as a thorn in the side of the Hollywood establishment who expressed unbridled hatred for biracial buddy movies such as *Soul Man* (1986) also praised him as a political activist whose outspokenness opened the door for other black filmmakers and drew black audiences to his films. As Watkins observes, "Lee's frontal assault was in fact strategic and intentional to the extent that such as position generated enormous publicity while also building a strong base of black support." (1998, 111)

The differing box-office receptions accorded *Rocky III*, *Beverly Hills Cop* and other biracial buddy movies and *Do the Right Thing* demands a closer discussion of their strikingly different approaches to classical Hollywood style. Classical Hollywood style privileges the notion of transparency over foregrounding. While *Rocky III* and *Beverly Hills Cop* incorporate a post-classical style designed to maximize marketplace synergies, *Do the Right Thing* combines experimental and techniques that foreground director Lee's authorial presence by intentionally violating the paradigm of stylistic transparency through techniques such as direct address. Robin Wood's (1986b) observation that the transparency of classical Hollywood cinema insistently embodies and reinforces American capitalist ideology provides a basis for exploring these movies' differing treatments of the proposition that America is a land where all problems are solvable within the existing system.

While *Beverly Hills Cop* recognizes the threat posed to respectable middle-class values by conspiratorial German businessmen in a post-Fordist world of international economic relations, its seamless resolution of race and class differences stems from the black buddy's assimilation into a culture coded as white and middle class. The racial homogeneity of the interracial family formed through this process of assimilation contrasts sharply with the ethnic or racial otherness of villains who threaten to upset it. A curious lack of racial friction emerges from Axel Foley's immersion in wealthy white culture in *Beverly Hills Cop*. "A street-wise black Detroit cop is set loose in the national capital of conspicuous consumption, and all we get are jokes about the comic gentility of the local police force," David Ansen laments. (1984, 81)

Conversely, *Do the Right Thing* attributes racial and class tension in a Brooklyn neighborhood to post-Fordist economic trends that depressed central city African-American communities during the 1980s as companies relocated manufacturing jobs from the inner city to cheaper overseas labor sources. The few petit bourgeois service industry jobs to be found in the neighborhood are not controlled by blacks. Set in the Bedford-Stuyvesant neighborhood on the hottest day of the year, *Do the Right Thing* chronicles the conflicts that arise between the white owner of a pizzeria and his black patrons from his refusal to include African-American heroes on his otherwise Italian-American "wall of fame." This focus on the community results in *Do the Right Thing*'s inclusion of a large number of black and ethnic characters, a deviation from the biracial buddy formula's focus on the white middle-class community that results in a much more complex study of race and class relations. In fact, *Do the Right Thing* incorporates the points of view of eight characters, six of whom are people of color: Mookie (Spike Lee), Tina (Rosie Perez), Mother Sister (Ruby Dee), Da Mayor (Ossie Davis), Buggin' Out (Giancarlo Esposito), and Radio Raheem (Bill Nunn). (Bordwell et. al, 395)

The vagueness of these characters' goals results in the film's insistent refusal of the narrative closure that occurs in the biracial buddy film through the conflation of the formation of an interracial family of brothers and the restoration of law and order, begging the question of what the "right thing" to do was in order to solve the race and class tensions that arose in urban America during the 1980s. However, even though *Do the Right Thing* stretches the boundaries of classical Hollywood style, it nonetheless conforms to it on the basis of its use of a high-angle shot of Mookie to suggest his self-absorption and lack of interest in his neighborhood and its use of sound to illustrate the racial tensions that threaten to erupt between urban blacks and whites living in close proximity to each other. (Bordwell et. al, 399)

Biracial buddy movies thus celebrated black and white buddies as integrated members of a culture of meritocratic mobility, erasing any recognition of the class politics involved in the definition of black identity. Conversely, *Do the Right Thing*'s unflinchingly complex treatment of race and class relations shed light on the contradictions in race and class mobility by challenging classical Hollywood style's insistence on clear cut character goals and resolution of race and class conflicts. Ultimately, Hollywood's differing approaches to distributing these movies and promoting their stars and the striking differences in the films' conformity to generic parameters account for the differing receptions accorded them by audiences. As Watkins (1998) observes, Lee's violation of classical Hollywood style confused some viewers. Nonetheless, he argues that this rupture also forced spectators to ponder the many questions the film refused to answer about race and class relations in a post-Fordist society. Arguably, the biracial buddy movie failed to provoke viewers into such reflection.

The Legacy of the Reagan Era

Hollywood's dependence on the blockbuster for megaprofits has since the 1980s transformed it into an even more two-tiered industry since the 1980s. Expenditure on production and marketing budgets now outpaces revenues as the industry bets record sums on blockbusters with the hope of hitting a home run. In March,1998, movie budgets averaged a record $75.6 million, up 21 percent from 1996, the largest one-year jump on record. (Schatz 1999, 26) The transnational corporation's "Hollywoodization" of world cinema, its colonization of foreign economies, and its westernization of other cultures account for these ballooning costs as the industry hungers for ever-greater returns.

More importantly, Hollywood's focus on further increasing its worldwide market share reflects a larger trend in industry towards reducing the globe to a huge system of capitalist production and consumption. A valid concern about Hollywood's treatment of changes in global economic and cultural relations arises amidst the filmed entertainment industry's penchant for reducing issues of economic mobility and disenfranchisement to lowest common denominator terms. These trends have intensified since Reagan's two terms in office as successive waves of company mergers and acquisitions have crested.

Tino Balio (1998) writes that several factors promoted this trend, including economic growth in Western Europe, the Pacific Rim, and Latin America, the end of the Cold War, the commercialization of state broadcasting systems, and the development of new distribution technologies. In the ensuing decade of the 1990s, the transnational corporation eclipsed the nation-state as a determinant of international economic development by using its threat to withhold investment capital as a bargaining chip with governments in developing countries. Ben Bagdikian (1989) observes that the newly formed Time Warner had in 1989 a total value of $18 billion, more than the combined gross national products of Jordan, Bolivia, Nicaragua, Albania, Laos, Liberia, and Mali. When the European Union decided not to remove trade barriers and tariffs on movies and television programs in 1992, Time Warner, Turner, Disney, Viacom, and NBC responded by forming partnerships with European television producers, broadcast stations, cable and satellite networks, and telecommunications services. Rather than continuing to view European markets as programming outlets, Time Warner invested in satellite broadcasting in Scandanavia, FM radio in England, and pay-TV in Germany and Hungary. (Balio 1998)

The FCC's suspension of the fin-syn rules in 1996 led to greater horizontal concentration within the media industry. The centralization of financial resources created by multiple waves of mergers enabled conglomerates such as News Corporation and Disney to avail themselves of new opportunities abroad in formerly Communist countries and industrializing nations. The companies seized these opportunities by using a strong base of domestic operations to expand abroad. Their strategy focused on expanding horizontally to tap emerging markets worldwide, expanding vertically to form alliances with independent production companies to enlarge their rosters, and partnering with foreign investors to secure new sources of financing. (Balio 1998)

These companies pursued horizontal integration through their construction of overseas multiplexes, their purchase of recently privatized communications networks, and their use of satellite communication to supply programming for these distribution infrastructures. These deals demonstrate how an international cartel's expanding software-hardware alliances are eclipsing nation-state relations as an influence on economic and cultural relations. Ownership in these media promises to provide the communications giant with substantial influence over these countries' media cultures.

The proliferation of home video in Western Europe also promoted Hollywood's horizontal expansion abroad. By 1990, video sales in Western Europe reached nearly $4.5 billion and were dominated by the major Hollywood studios. Video sales in Europe, as in the United States, were fueled by hits. While international theatrical rentals abroad achieved parity with domestic receipts at home in 1990, the overseas market surpassed the domestic market in film rentals in 1994. (Balio 1998) The end of the Cold War in 1989 also propelled the Soviet Union into economic chaos and, ultimately, disintegration. While Reagan claimed credit for the Soviet Union's downfall, internal dissension within Communism's member nations was also responsible for the USSR's downfall. (Wills 1996)

The expansion of a worldwide market for Hollywood movies resulted in the further proliferation of Reagan era-inspired stories about the Protestant success ethic and the redemption of race, gender, and class relations over the 1990s. Sequels based on some of the most popular biracial buddy movies of the 1980s continued to dominate the box-office totals in the wake of Reagan's retirement from office in 1988. In 1989, for example, *Variety*'s annual list of box-office champs included the biracial buddy movies *Indiana Jones and the Temple of Doom* (#2; $115.5 million), *Lethal Weapon* 2 (#3; $79.5 million), and *The Karate Kid III* (#29; $19.2 million), revealing the genre's ongoing viability. The skyrocketing international success of the biracial buddy franchise (*Lethal Weapon* grossed $65.2 million while *Lethal Weapon 4* (1998) grossed $130.4 million) furthermore suggests that the biracial buddy genre still has tremendous market cache. While Hollywood's economic health achieved record-breaking heights during the 1980s, its obsessive focus on profits rather than promoting public dialogue must be addressed in the interest of global media democracy.

Footnotes

1. Vertical integration involves the expansion of a business enterprise through the control of its operations from the points at which raw materials are acquired to the point of sale of the final product. A vertically integrated system of film and television entertainment incorporates the production of the movie or program, its distribution, and its final

presentation. Horizontal integration similarly refers to a high concentration of ownership in a particular medium.

2. High concept is a mode of movie production that stresses the condensability of a plot premise into 25 words or less for the purpose of maximizing marketing efficiency. This mode of production, summarized by Steven Spielberg's observation that the best movie ideas are those that "you can hold in your hand," proved the perfect complement for an era of movie making in which escalating budgets required movies to have immediate appeal to mall multiplex audiences and consumers of ancillary merchandise as well as a much larger audience of moviegoers. Box office figures drawn from worldwideboxoffice.com and variety.com.

3. Late capitalism is a political system in which global communications technologies have made possible worldwide systems of labor management and manufacturing that have shifted the balance of power between labor and capital to the benefit of the latter.

References

Allen, Robert C. and Douglas Gomery. 1985. *Film history: Theory and practice*. New York: Alfred A. Knopf.

Ansen, David. 1984. An officer and a comedian, *Newsweek*, 3 December: 81. Washington Post, 31 March: G1.

Bagdikian, Ben. (1989). Lords of the global village," *The Nation*. 12 June, 1989: 805-820.

Baker, Bert. 1984. CBS/Fox to dupe and market vcl in UK; global extension?, *Variety*, 22 January: 43.

Balio, Tino. (1998). 'A major presence in all of the world's important markets': The globalization of Hollywood in the 1990s. In *Contemporary hollywood cinema*, edited by Steve Neale and Murray Smith, 58-73. New York: Routledge.

Bierbaum, Tom. 1982. Tom. FCC bird vote has some warning of orbital OPEC, *Variety*, 4 August: 36

Bordwell, David and Kristin Thompson. 1997. Film art: An introduction, 5th ed. New York: McGraw-Hill.

CIC, Japan Victor aiming joint pitch at nippon market, 1984,*Variety*, 8 February: 39.

Cohn, Lawrence. 1982. Stabilizing trend in film costs? *Variety*, 8, December: 1.

______________ 1984. Film costs will soar 36% in 1984," *Variety*, 15 February: 1.

'Consent' as small exhib shield, 1982, *Variety*, 10 February:1

Doane, Mary Anne. 1987. *The desire to desire: The woman's film of the 1940s.* Bloomington: Indiana University Press.

Dyer, Richard. 1986a. *Heavenly bodies: Film stars and society.* New York: St. Martin's Press.

_____________. 1986b. *Stars*. London: BFI Publishing, pg. 11.

Easton, Nina J. 1991. The high price of ego in hollywood, *Los Angeles Times*, 11 August: Calendar, 7.

ET, rocky III took 25% of summer's biz, 1982, *Variety*, 15 Sept.: 3.

Farhi, Paul. 1988. The quiet invasion of the media moguls, *Washington Post*, 27 November: H1.

FCC okays 12-12-12 proposal with 25% audience reach, 1984, *Variety*, 26 December: 45

Fiske, John. 1987. *Television culture*. New York: Routledge.

Flanagan, James. 1987. The american dream is best export us has, *Los Angeles Times*, 9 September: (4) 1.

Flint, Michael L. 1992. 1992: What's at stake for showbiz when euro nations wed, *Variety*, 11-17, January: 90.

Frank, Allan Dodds and Jason Zewei. 1987. The fault is not in our stars. *Forbes*, 21 September:120.

Gomery, Douglas. 1989. The reagan record. *Screen*, Winter/Spring: 97.

Greenberg, Manning. 1986. Selling hits is paramount; pioneering pre-recorded movies for the mass market. *HFD – The Weekly Home Furnishings Newspaper*, 25 August: 1

Guerrero, Ed. 1993.The black image in protective custody: Hollywood's biracial buddy films of the eighties, *Black american cinema*, edited by Manthia Diawara, New York: Routledge, 1993, 211-220.

Guild, Hazel. 1984. Yank distribs account for two-thirds of box office, *Variety*, 7 March: 338.

__________1984. CIC video preps low-ticket bow for raiders; hopes high," *Variety*, 21 March: 47.

Harmetz, Aljean. 1987. Hollywood battles killer budgets. *New York Times*, 31 May: (3) 1.

Harvey, David. 1989. *The condition of postmodernity.* Boston: Basil Blackwell.

Hilmes, Michelle. 1990. Pay television: Breaking the broadcast bottleneck, In *Hollywood in the age of television*, edited by Tino Balio. Boston: Unwin Hyman, 297-318.

Hollinger, Hy. 1984. Costs way up, so are rewards, *Variety*, 11 January, 1984: 17.

Hollinger, Hy. 1985. Tax reform clouds pic finances. *Variety*, 16 January:1.

Hollows, Joanne. 1995. Mass culture theory and political economy. In *Approaches to popular film*, edited by Joanne Hollows and Mark Jancovich. New York: Manchester University Press, 15-36.

Homevideo had a spotty 1987 – still lucrative, but leveling off," 1988. *Variety*, 6 January: 89.

How paramount keeps churning out winners, 1984, *Business Week*, 11 June: 148.

Jhally, Sut. 1989. The political economy of culture. In *Cultural politics in contemporary america*, edited by Ian Angus and Sut Jhally. New York: Routledge, 65-81.

Jowett, Garth and James M. Linton. 1989. *Movies as mass communication* 2nd ed. London: Sage.

Kart, Larry. 1985. Eddie Murphy: Comedy's supernova sends humor into a different orbit, *Chicago Tribune*, 7 April: C8.

Kellner, Douglas.1995. *Media culture: Cultural studies, identity, and politics between the modern and the postmodern*, New York: Routledge.

King, Thomas R. 1993. Open wide, *Wall Street Journal*, 26 March: R9.

Lee Spike, et. al. 1992. *By any means necessary: The trials and tribulations of the making of malcolm x.* New York: Hyperion.

______________. 1989. *Do the Right Thing*. New York: Fireside.

Loftus, Jack. 1985. Indies and syndies going steady, *Variety*, 2 January, 1985:1.

Michie, Larry B. 1985. Shut out of US, pay tv, Hollywood takes Europe for piece of the action, *Variety*, 9 January,1985: 77.

Mietkiewicz, Henry. 1989. Mel gibson stays high and dry…and lethal, *Toronto Star*, 2 July: C1.

Miller, Mark Crispin. 1990. Advertising: End of story, in *Seeing through movies*, edited by Mark Crispin Miller, New York: Pantheon, 186-246.

Miyoshi, Masao. 1994. A borderless world?: From colonialism to transnationalism over the decline of the nation-state, *Critical Inquiry*, (19): 139-154.

Murphy, A.D. 1985. Cop leaves all others in the dust, *Variety*, 6, June: 3.

Pitman, Jack. (1984) Satellite cable era in Britain makes its bow," *Variety*, 18 January: 1.

Rader, Dotson. (2002) My life's a work in progress. Parade, 10 February: 6-7.

Rebel with a cause. *Broadcasting*, 19 May, 1980: 35.

Rosenberg, Emily S. 1982. Spreading the american dream: American economic and cultural expansion, 1890-1945, New York: Hill and Wang, 7.

Ryon, Ruth. 1988. Hot property: mel gibson rents home in malibu for family, *Los Angeles Times*, 16 October: (8) 1.

Schatz, Thomas.1999. Show me the money: In search of hits, the industry may go broke, *The Nation*, 5/12 April: 26-31.

_____________. 1997. Return of the Hollywood studio system, in *Conglomerates and the media*, edited by Erik Barnouw, et al. New York: The New Press, 73-106.

_____________. 1993. The new Hollywood, in *Film theory goes to the movies*, Jim Collins, et.al, eds., New York: Routledge, 8-36.

_____________. 1981. *Hollywood genres: formulas, filmmaking, and the studio system.* 26. New York: Random House.

Siskel, Gene. 1987. Places on the top danny glover: From black panther to hot actor, *Chicago Tribune*, 8 March: C6.

Sky Channel sked has U.S. indie air. 1985. *Variety*, 16 January: 132.

Stallone, Sylvester. 1977. *The official rocky scrapbook.* New York: Grossett & Dunlap.

Stenger, Josh. 1997. Consuming the planet: Planet Hollywood, stars, and the global consumer culture. *Velvet Light Trap*, 40: 42-55.

Summer a sizzler at bo for french CIC; 60% over '80. 1981. *Variety*, 16 September: 45.

Traube, Elizabeth G. (1992). *Dreaming identities: Class, gender, and generation in 1980s movies*. Boulder: Westview Press, Inc.

Turner, Richard. 1993. Hollyworld, *Wall Street Journal*, 26 March: R1.

Upcoming1985 big-buck releases. 1984. *Variety*, 26 December: 60

US majors off to slow start after spectacular '83 in Japan. 1984. *Variety*, 21 March: 7.

Watkins, S. Craig. 1998. *Representing: Hip hop culture and the production of black cinema*. Chicago: University of Chicago Press.

Weinraub, Bernard. 1993. On the set with Sylvester Stallone: alright already, no more mr. funny guy," *New York Times*, 9 June, 1993, C1.

Wills, Garry. 1996. It's his party. *New York Times Magazine*. 11 August: 52.

________. 1987. *Reagan's america: Innocents at home*. Garden City, NY: Doubleday & Company, Inc., 365.

Wood, Robin. 1986a. *Hollywood from vietnam to reagan*. New York: Columbia University Press.

__________. 1986b. Ideology, auteur, genre. In *Film genre reader*, edited by Barry Keith Grant. Austin: University of Texas Press, 59-73.

Wyatt, Justin. 1994. *High concept: Movies and marketing in hollywood.* Austin: University of Texas Press.

CT+M

Running Head: THE IMPACT OF WEBSITE CAMPAIGNING

The Impact of Website Campaigning on Traditional News Media and Public's Information Processing

Gyotae Ku

Michael Pfau

University of Oklahoma

Lynda Lee Kaid

University of Florida

For presentation at the Association for Education in Journalism and Mass Communication convention in Miami Beach, FL, August 7-10, 2002

Authors' Notes: Gyotae Ku is a doctoral candidate and Michael Pfau is professor and chair, Department of Communication, University of Oklahoma. Lynda Lee Kaid is professor, College of Journalism and Communications, University of Florida. Please direct all correspondence concerning this manuscript to the first author at the University of Oklahoma, Norman, OK 73019 (gyotae@hotmail.com; 405-325-9801).

The Impact of Website Campaigning on Traditional News Media and Public's Information Processing

Abstract

The present study was designed to examine the impact of website campaigning as new media on the traditional news media agenda and the public opinion during the 2000 presidential election campaigning. Based on an intermedia agenda-setting approach, this study demonstrated the direction of influence among three media in terms of the flow of information. Further, an agenda-setting impact of website campaigning on the public were also identified.

The Impact of Website Campaigning on Traditional News Media and Public's Information Processing

The intent of this analysis is to offer further insight into the processes associated with news selection among media organizations. In fields using agenda-setting research, the agenda of the news media recently has become a principal focus of attention in the agenda-setting process (Protess & McCombs, 1991). Especially, a key question of agenda-setting, "who sets the media's agenda?" has revived an interest in the flow of news stories and story ideas among the news media.

Since White's classic gatekeeper study (1949), there have been concerns about how the issues in institutional media systems are created (e.g., Cobb & Elder, 1971; Robert & McCombs 1994; Rogers, Dearing, & Bregman, 1993). The greatest attention has been paid to the relationship among media: the intermedia-agenda function. For example, based on the concept of an intermedia-agenda function, Roberts and McCombs (1994) found that the news agendas of different news organizations have some impact on each other. However, the inquiry into the intermedia-agenda function has been centered around the traditional media, mainly newspapers and television. The current study recognizes a necessity to consider how new media incorporates new ways of information exchange in terms of intermedia agenda-setting function.

Since the 1996 political campaign, the political uses of the Internet have been examined as a significant means of political information exchange (Hacker, Howl, Scott, & Steiner, 1996; Whillock, 1997). To mobilize supporters through cyberspace, political candidates have begun to convey their voices "on the net." Today nearly all candidates have an online strategy. They have established a website where a variety of information concerning the party's candidates, manifesto and campaign can be obtained. Internet networks can also influence the public's exposure to information (Bikson & Panis, 1996; Whillock, 1997). They can create opportunities for individuals and groups to affiliate and to participate in civic affairs and public life. Further, Internet users' active involvement in political campaigns has been reported (Hacker et al., 1996; Whillock, 1997). Given the growth of Internet campaigning as an alternative media channel and the role of online information user as an opinion leader, Internet campaigning should be considered very important as a channel of communication and source of information.

Nevertheless, cyberspace as a major information source over public and other media has been scarcely studied. Much has been said and written about the outlines of website and its own implication in social and political life (Bobbitt, 1995; Corrado, 1996; Tedesco, Miller, & Spiker, 1999). Not much has been said or written about specifically how the new technologies will affect the flow of information in relation to other media channels. This study of intermedia agenda-setting examines political campaign websites as a potential source shaping or interacting with the traditional news media's agenda.

Political Campaigns through Internet

Despite divergent claims about the existence of the impact of Internet campaigning, the Internet has been a part of a political phenomenon in which a huge amount of political information is exchanged between politicians and the general public or people specially interested in that information (Corrado, 1996; Hacker et al., 1996; Klotz, 1997; Whillock, 1997). Thus, as Whillock (1997) insists, the Internet has become a valuable source supplementing other traditional media such as newspapers and television in information dissemination and retrieval.

The year 1996 can be marked as the year of a new media politics in that political candidates began rushing to establish a presence "on the net" (Whillock, 1997). In the 1996 general elections, 50 of 68 senatorial candidates had their own home pages (Klotz, 1997). The 1996 presidential election was also the first national context to recognize the power of the Internet as a mass medium. According to Meddis (1996), Bob Dole's website recorded more than four million "hits" by Web browsers.

Candidates' political websites are also accessible news sources for the traditional news media. According to Whillock (1997), candidates in 1996 routinely sent press releases via their home pages and often directly to journalists' e-mail addresses in an effort to frame campaign issues to their advantage. Since most major newspapers and television stations are connected to the Internet (Noble, 1996), members of the traditional media can also stop by a candidate's online campaign press gallery to pick up the daily briefing and the day's digital quality video and audio clips, or simply find out where the candidate is going to be.

An endeavor has been made to examine the outlines of political campaign websites by systematically observing them (e.g., Bucy, D'Angelo, & Newhagen, 1999; Corrado, 1996; Magolis, Resnick, & Tu, 1997; Tedesco et al., 1999). Such studies, however, have been limited to the Internet itself as a medium. Little attention has been given to a dynamic relationship among media or the role of new media related to traditional media. Thus, the development of intermedia agenda-setting research associated with Internet communication could illuminate the changing role of both new media and traditional news media in a contemporary mass democracy.

Intermedia Agenda-Setting across Media

An effort to understand the implications of mediated reality is inherent in agenda-setting theory. Since McCombs and Shaw's seminal research (1972), their assumptions have been detailed in diverse research and conceptual patterns. However, most agenda-setting studies have used a mix of media in figuring out issue agendas. Some scholars have indicated that any causal relationship between the media coverage and the salience of topics in the minds of individuals in the audience has been generally accepted in agenda-setting studies (Becker, McCombs, & McLeod, 1975; Dearing & Rogers, 1996). However, Lang and Lang (1991) point to some conceptual problems of agenda setting. They argue that, "the whole question of how issues originate is sidestepped, nor is there any recognition of the process through which agendas are built or through which an object that has caught public attention, by being big news, gives rise to a political issue" (p.278).

Other works have outlined distinct agenda setting roles for different media channels (McClure & Patterson, 1976; McCombs, 1977; Shaw and McCombs, 1977; Wanta, 1997). For example, Shaw and McCombs (1977) report that newspapers had a major agenda-setting role on political issues with TV playing a lesser role. Although their study focused on a relationship between specific media and the public, not among media themselves, the findings could imply that each medium might be uniquely involved in the "agenda building" process.

Before a news agenda emerges, there may be some structural mechanisms involved in the news process. For example, television, according to Cronkite (1998), frequently repeats a newspaper story. Nevertheless, agenda-setting researchers have verified an agenda-setting function without specifying the nature of the relationship among the mass media agendas. As Rogers et al. (1993) insist, most agenda-setting research has widely accepted the media agenda just as a given. There are only a few studies focusing on the process by which media contents are constructed (e.g., Atwater, Fico, Pizante, 1987; Gandy, 1991; Reese & Danielian, 1991).

Some research of the media leadership exerted by some news organizations over others has found that newspapers tended to influence the broadcast agenda for some stories more than the reverse (Atwater et al., 1987; Reese & Danielian, 1991). In this view, the news media can be regarded as one of the intermediary structures involved in news processing of other media. Reese and Danielian's study (1991), focusing on news coverage of cocaine issues, found that the print media, especially *The New York Times*, set the agenda for the television networks. Atwater et al. (1987) also support the agenda-setting function of newspapers on the broadcast agenda for statehouse stories.

Intermedia relationship studies have been conducted to see how the campaign issues fluctuate across the media. For example, being concerned with how issue salience among media is created, Roberts and McCombs (1994) investigated the interrelationship between newspaper coverage, television coverage, and political advertising in terms of intermedia agenda-setting during the 1990 Texas gubernatorial campaign. Their study confirms political advertising as an agenda setter for both television news and newspaper coverage of the issues.

In despite of a close relationship among media in news processing, considerable political debate, as Kaid and Sanders (1984) note, exists over the question of which medium serves as the primary news source for the public. Thus, this study seeks to examine the relationship among media in building the salience of topics that make up an agenda of issues as conveyed to the public. In terms of intermedia agenda-setting, the present study examines how different media formulated the issue salience of the 2000 presidential campaign news. In particular, the focus for the analysis is on the campaign news coming from the traditional news media (television/newspaper) and new media (candidates' websites).

During presidential election campaigning, presidential candidates have become a primary news focus in the daily flow of news (e.g., Cronkite, 1998; Gans, 1979; Jamieson & Campbell, 1997). In particular, the candidates' websites have been identified as important news sources for the traditional news media (Middleberg, 2001; Whillock, 1997). Thus, this study predicts that the news agenda in candidates' websites turns up as the subsequent agenda of campaign activities and issues covered by other news media.

Hypothesis 1: Candidate websites exert an intermedia agenda-setting influence with traditional media.

Researchers have acknowledged the importance of Internet campaigning in disseminating information to the electorate (e.g., Corrado, 1996; Corrado & Fireston, 1996; Hacker et al., 1996; Klotz, 1997). Nevertheless, none of them has studied how the campaign agendas make their way to the public and how they influence public opinion. As an explorative study, the research question traces the flow of campaign agenda to the public in relation to other news media, and examines the impact of news agendas on public opinion via agenda-setting study.

RQ1: How do each presidential candidates' websites influence the public agenda?

Research Design

A content analysis, the most widely accepted tool in analyzing media content of political campaigns (Kaid, 1996), was conducted to determine the 2000 campaign news agendas of newspaper, television, and candidates' websites. Beside the media contents chosen, the Gallup poll data (www.gallup.com/election2000/issues.asp) was also used to find highly significant news agendas. To answer the hypothesis and research question, each media's agendas were rank ordered and compared with other media agendas and the polling data about the public's issue salience.

Sampling

In the current study, the agenda of each medium was investigated for two 4-week periods. Time 1 monitoring period was September 5 – October 6, 2000; Time 2 period was October 7 – November 7. In each case, 7 days out of the 32 days were sampled for each of the two monitoring periods. The varied selection of time period to compare campaign agendas among news media might help elaborate how temporal variable influences agenda-setting process among media or between media and public. To trace further intermedia relationship and an optimal time lag, this study also selected the third time period from the second monitoring period. A random number table was used to choose the first day for analysis, so that the news samples comprised 7 consecutive days, excluding weekend days: Time 1 period - September, 20 to 28, except 23 and 24; Time 2 - October, 12 to 20, except 14, 15; Time 3 - October, 27 to November, 6, except October 28, 29 and November 4, 5. Since some television networks do not air their evening news on the weekend, the two days were excluded to compare intermedia function.

The first research focus was on two prestigious national newspapers: *The New York Times* and *The Washington Post*. These newspapers were chosen due to their significant impact on the public opinion and the time and money spent in accessing the data. For example, researchers have shown *the New York Times* and *the Washington Post* are important in setting the media agenda for national issues (Dearing & Rogers, 1996; Gans, 1979; Reese & Danielian, 1991). Beside these elite newspapers, the other two newspapers in regional markets were selected to see how differently the newspapers react to other media agenda and how market differences influence the flow of news media agenda. The chosen newspapers for the local market were *The Houston Chronicle* and *The Milwaukee Journal Sentinel*, which have the greatest circulation of any newspaper in the states of Texas and Wisconsin, respectively. Besides the time and money in collecting the data, consistent news availability was also considered in choosing these local newspapers. To collect newspaper articles related to the 2000 election campaign, *The Lexis-Nexus Academic Universe* was used. The keywords to search for campaign news articles of each newspaper were "presidential campaign" or "election" with the candidates' names (Gore and Bush).

The evening newscasts from three networks (ABC, CBS, NBC) were analyzed to compute the campaign news agendas of TV. After locating the stories in the *Vanderbilt Television News Archive Abstracts*, the present study analyzed the campaign related newscasts by viewing videotaped copies of the actual news stories.

For the candidates' websites agendas, this study examined the news release directory in the official websites that were established by the two presidential candidates, Al Gore and George W. Bush. The news releases at Time 1 and 2 were fully downloaded by identifying their unique http addresses (URL). Because of data availability after election, the news releases at Time 3 were gathered through the Internet Archive (www.archive.org/collections/e2k.html). The "news release directory" containing news releases was the only daily-based news source on the candidates' websites operated by the two candidates, so it seemed to be the best source to ascertain the presidential candidates' agendas.

In addition, to see what impact news media coverage had on the public agenda, three public opinion polls corresponding to the three time periods chosen in this study were collected through "polls & surveys" in *The Lexis-Nexus Academic Universe*. The first two surveys were conducted by *the CBS News* and *the New York Times* during the following periods: respectively, 09/27 to 10/01, 10/18 to 10/21, 2000. The last survey was conducted by *the CBS News* during 10/29 to 10/31, 2000. Following is the question used to gather public opinion in those telephone surveys: "What do you think is the single most important problem for the government—that is, the President and Congress—to address in the coming year?"

Categories of the Media Agenda

To determine the campaign issue agendas of news media, this research content analyzed the news media contents and reviewed the July, 2000, Gallup poll results. The July data were the closest available for the official campaign period that included the diverse number of issues needed for this study. The news agendas regarding political ads, TV shows, fundraisers, minorities, and world affair issues were dismissed due to the small number of news stories. Based on the results, the current study picked ten salient media agendas regarding the 2000 presidential campaign. The ten media agendas selected were public education, national economy, health care, Social Security, federal tax, handling budget, environment, national defense, energy policy, and crime (see Appendix for the ten agendas and their keywords).

Measurement

To figure out the media's issue salience, this study attempted to measure the amount of each news agenda. For agenda-setting studies that have adopted content analysis, media content is usually operationalized as the number of some countable unit for a particular period of time (Dearing & Rogers, 1996). Following typical agenda setting research, this research counted the aired time (sec.) of campaign news on television as related to the ten chosen agenda. Each televised campaign news story was considered as the unit for coding. The researcher and one graduate student studying political communication coded the stories. The coders were asked to identify the media agenda associated with the story of each newscast after watching the collected newscasts. Then the coders classified the story into the ten campaign news agenda. On a sample of 20% of the newscasts, their intercoder reliability produced a perfect score.

As for newspaper and websites news agendas, the MS Word software program was used to count keywords related to the ten media agendas. According to Kaid and Wadsworth (1989), manifest content and quantification have been crucial concepts in content analysis to increase a more accurate description of the data. To have an objective description by analyzing manifest content like word(s), the use of the program seems to be highly reasonable. Following Roberts and McCombs's study (1994), this study also used "hit" as a measurement unit defined as "the frequency of a specific issue word and/or related issue words" (p. 256). Thus, each keyword, out of the ten agendas and their issue words in *Appendix*, was entered into the program's "Find" feature in "Edit" and manually counted. In addition to a word-by-word analysis, the researcher manually examined the program's results for accuracy and context.

Statistical Analysis

In a descriptive level, the time of campaign news broadcasted via the three national networks and the frequency of each specific issue (the measurement unit, "hit") was reported to trace the rank of each agenda and the issue salience carried by each media. The aired time and the number of "hit" measure the relative salience of an issue agenda on the media agendas. This descriptive analysis might also give some information of how each media transformed the importance of campaign news agenda over time.

Following the most frequent method in data analysis for agenda-setting function, this study rank ordered the ten media agendas for the 2000 presidential campaign and then examined the cross-lagged correlations between media at two points in time. To make cross-lagged comparisons, this study used rank-order correlations (Speaman's rho) that summarize the level of agreement between media agendas. Further, the Rozelle-Campbell baseline statistic was computed to determine the significance of the cross-lagged correlation coefficients in terms of directionality (Pelz & Andrews, 1964; Robert & McCombs, 1994; Tipton, Roger, Haney, & Baseheart, 1975). In addition, the partial correlation analyses were conducted to measure the strength of the association between two variables, controlling for other variable(s). The key question of this analysis, as Roberts and McCombs (1994) indicate, is whether the second variable adds any predictive value.

Results of Data Analysis

Data analysis was conducted on the content analysis of the 2000 presidential campaign issues and the poll data to answer the research hypothesis and question. First, the overview of the data is presented to identify the campaign agendas in each medium and their patterns over time. "Hit" and time were used as units of measurement for this purpose. Next, Spearman's rho correlation, partial correlation, the Rozelle-Campbell baseline, and path analysis were used to assess the research hypothesis and questions.

Campaign Agenda in Media

In a descriptive level, the frequency of each specific issue ("hits") and the time of campaign news aired (seconds) are reported to see the salient 2000 presidential campaign agenda in news media. This data analysis also revealed the issue salience of each medium and the agenda pattern across time.

Websites' campaign agenda. A total of 280 news stories were identified and analyzed in the two official candidates' websites (Gore-139, Bush-141). Gore's website produced 6,524 hits related to the ten news agendas out of 109,737 words, while Bush's web had 3,415 hits out of 81,065 words. Gore's website had a larger text size and more agenda relevant keywords than did Bush's website.

Insert Table 1 here

Table 1 reveals how the two presidential candidates' websites addressed the ten campaign agendas in each time period. As Table 1 reveals, "healthcare" had the most issue salience in each time period, but the coverage proportion of "healthcare" decreased over time. On the other hand, the agenda proportion of "Social Security" and "economy" increased over time. In particular, "Social Security" dramatically changed from position 7 at Time 1 to position 2 at Time 2 and Time 3 in terms of agenda rank order. Generally, "crime," "environment," and "defense" received less emphasis than other issues in the 2000 presidential campaign periods.

Insert Table 2 here

National newspapers' campaign agenda. The greatest issue coverage in national newspapers, as shown in Table 2, was given to "healthcare" (1,123 issue hits out of 6,923 or 16% of the total hits), followed by "education" (1,117 hits, 16%), "economy" (879 hits, 13%), and "budget handling" (794 hits, 12%). Like the "healthcare" issue in the websites mentioned previously, national newspapers reduced the coverage of "healthcare" over time, although the issue was the most salient issue overall. As with candidate websites, the proportion of "Social Security" emphasis in national newspaper's coverage increased over time (3% of the total hits at Time 1 to 12% at Time 3). In contrast with the "economy" issue in candidate websites, newspaper coverage of "economy" dramatically decreased over time (19% of the total hits at Time 1 to 8% at Time 3). The "crime," "environment," and "defense" issues were also the least emphasized in the national newspapers.

Insert Table 3 here

Local newspapers' campaign agenda. As Table 3 reveals, local newspapers also had the greatest emphasis on "healthcare" compared to other issues (350 hits out of 2,485 total hits or 14% of total hits). Like "education" coverage in national newspapers, the "education" issue in the local newspapers was also rank ordered as the second in emphasis. Both national and local newspapers placed more emphasis on the "education" issue than the candidates' websites.

Compared to "energy policy" emphasis in national newspapers and candidate websites, local newspapers placed more attention on the "energy policy" (12% out of total hits). But the "Social Security" issue, which was ranked as 8th in the total agenda salience, received less attention in the local newspapers than in candidate websites or national newspapers.

Insert Table 4 here

Televisions' campaign agenda. As shown in Table 4, television networks placed the greatest issue coverage on "energy policy" (1,170 seconds out of 9,120 or 19% of the total campaign newscasts), followed by "economy" (1,551 seconds, 17%) and "budget handling" (1,448 seconds, 16%). But the television news media also showed different issue priorities over time. For example, the "energy policy" issue was the predominant issue at Time 1, "education" was the most salient issue at Time 2, "Social Security" was most emphasized at Time 3 (respectively, 45%, 38%, 35%).

"Defense," "crime," and "environment" were the least-covered campaign issues by the three networks. The number of issues covered via television was increasingly diversified as the Election Day drew near. Only the "economy" and "education" were covered by the networks in all three time periods chosen in this study. The coverage proportion of the "economy" issue declined over time, while the "budget handling," "taxes," "Social Security," and "environment" increased over time.

Intermedia Agenda-Setting: Website vs. Traditional News Media

Hypothesis 1 examined the intermedia agenda-setting impact of candidate websites on the traditional news media. It predicted that candidate websites exert an intermedia agenda-setting influence with traditional media. To address this hypothesis, this study examined the relationship between each candidate's website and the traditional news media, national newspapers and television, and the websites as new media and the traditional news media.

Each candidate website vs. Traditional news media. Each candidate website was compared to the traditional news media to assess its impact in setting the media's 2000 campaign issue agendas. This analysis was examined by using Spearman correlations and Rozelle-Campbell baseline statistics.

Insert Figure 1 here

As shown in Figure 1, the correlation coefficients between Gore's website at Time 1 or Time 2 and the traditional news media revealed some statistical significance with national newspaper coverage at Time 2 (+.58) and at Time 3 (+.73). However, since the cross-lagged correlation between national newspaper coverage at Time 2 and Gore's website at Time 3 showed some statistical significance, both Gore's website and national newspaper coverage at Time 2 and Time 3 were reciprocal. In addition, the Spearman *r* between national newspaper coverage at Time 2 and Gore's website at Time 3 revealed greater statistical significance than the cross-lagged correlation between Gore's website at Time 2 and national newspaper at Time 3. Thus, the impact of Gore's website at Time 2 on national newspaper coverage at Time 3 was not clear as much as the relationship between Gore's website at Time 1 and national newspaper coverage at Time 2.

Further, because the correlation coefficient between Gore's website at Time 1 and newspaper agenda at Time 2 (+.58) exceeded the baseline (+.20), and the coefficient between Gore's website at Time 1 and newspapers at Time 3 (+.48) went greater than the baseline of +.28, it is concluded that Gore's website at Time 1 showed significant intermedia agenda-setting impact on national newspapers at Time 1 and Time 3.

The correlations between Gore's website and television coverage also revealed that Gore's website at Time 2 had statistical significance on the television agenda at Time 3 (+.89). The Rozelle-Campbell baseline between Gore's website and the television further supported the relationship between Gore's website at Time 2 and the television at Time 3. In addition, the baseline between Gore's website at Time 1 and television at Time 3 (+.33) indicated that since the correlation coefficient of +.39 surpassed the baseline, there was a significant relationship between Gore's website at Time 1 and television coverage at Time 3.

Insert Figure 2 here

The cross-lagged correlations between Bush's website and the traditional news media, as shown in Figure 2, showed that Bush's website at Time 2 had significant intermedia agenda-setting impact on the national newspaper and the television at Time 3 (respectively, +.66, +.85). The Rozelle-Campbell baseline not only supported the relationship between Bush's website at Time 2 and the national newspaper and television at Time 3, but also revealed that Bush's website at Time 1 had statistical significance on the national newspaper and the television at Time 2 and Time 3, since the correlation coefficient (respectively, +.53, +.47, +.41, +.44) exceeded the baseline (respectively, +.27, +.23, +.13, +.33).

Beside elite newspapers, the present study examined two local newspapers to see how differently the newspaper agenda in different market react to each candidate website. The cross-lagged comparisons between the local newspaper agenda and each candidate's website agenda were accomplished, and the correlation coefficients were evaluated in a relation to the Rozelle-Campbell baseline.

The cross-lagged correlation between Gore's website at Time 1 and the local newspaper at Time 2 (+.40) exceeded the baseline statistic (+.24), while the correlation coefficients between Bush's website at Time 1 and the local newspaper at Time 2 and Time 3 (respectively, +.74, +.29) exceeded the baseline statistic (respectively, +.29, +.21). Thus, the relationship between candidate websites and the local newspaper coverage also revealed that Bush's website agenda had more significant intermedia agenda-setting impact on the local newspapers across time than Gore's website did.

Overall, Gore's website had some significant intermedia agenda-setting impact in the following relationship: Gore's website at Time 1 and the national newspaper at Time 2 and Time 3, Gore's website at Time 1 and the television at Time 3, and Gore's website at Time 2 and the television at Time 3. However, there were no significant intermedia agenda-setting impact between Gore's website at Time 1 and the television at Time 2, and between Gore's website at Time 2 and the national newspaper at Time 3. Therefore, Bush's website showed statistically more significant impact on the traditional news media across all the time periods that Gore's website; except the relationship between Bush's website at Time 2 and the local newspaper coverage at Time 3 (reciprocal relationship). That is, the results examined revealed that Bush's website had greater intermedia agenda-setting impact on the traditional news media than Gore's website.

Insert Figure 3 here

Website as new media vs. Traditional news media. According to the cross-lagged correlations between the websites and the televisions across time, as shown in Figure 3, the websites at Time 2 had a significant relationship with the television and national newspaper coverage at Time 3 (respectively, Spearman $r = +.88, +.67$). However, since there was a significant relationship between the national newspapers at Time 2 and candidate websites at Time 3 (+.76), the media agendas between the websites and the national newspapers at Time 2 and Time 3 were found to be reciprocal. Thus, the cross-lagged correlations only revealed the impact of website at Time 2 on the television campaign coverage at Time 3.

However, as shown in Figure 3, use of the Rozelle-Campbell baseline statistic to determine significance further supported Hypothesis 1 that the issue emphasis in the presidential candidates' websites had some intermedia agenda-setting impact on the traditional news media coverage. According to Figure 3, since the Spearman correlation coefficient between the website agendas at Time 1 and the television agenda at Time 3 (+.35), and the coefficients between the website at Time 1 and the national newspaper agenda at Time 2 and Time 3 (respectively, +.53, +.39) exceeded the baseline statistic value (respectively, +.32, +21, +.27), additional website impact on the traditional media was supported.

On the other hand, the cross-lagged comparisons and the Rozelle-Campbell baseline between the website agenda and the local newspaper agenda revealed that as the cross-lagged correlation between the websites at Time 1 and the local newspaper at Time 2 (+.52) exceeded the baseline (+.24), only candidate website at Time 1 exerted intermedia agenda-setting impact on the local newspaper coverage at Time 2. Compared to the relationship between candidate website and the national newspapers, there was less intermedia agenda-setting relationship between candidate website and the local newspapers.

The data analyses described above using Spearman correlations and Rozelle-Campbell baseline statistics were further analyzed by partial correlations. Each entry A in Table 5 shows the previously reported outcome of the cross-lagged correlations between independent and dependent variable. The earlier values of the dependent variable as a predictor of the dependent variable at Time 2 were considered at entry Bs in Table 5. Entry Bs indicate how much the predictive power of the independent variables at Time 1 will be diminished by controlling for the dependent variables at Time 1. In entry Cs, the relationship between independent and dependent variable is examined with the impact of another major predictor removed. In entry Ds, the effects of both the dependent variable at Time 1 and the other predictor are controlled simultaneously to see the impact of the independent variable on the dependent.

Entry B, C, and D in II, III, IV, and V, as shown in Table 5, revealed that the first-order and second-order partials were even larger than the original zero-order correlation coefficients. Even with the introduction of additional controls, there were still significant website effects in the followings: website at Time 1 and national newspaper coverage at Time 2 and Time 3, website at Time 1 and television coverage at Time 3, and website at Time 2 and television coverage at Time 3. Thus, the results of partial correlations were identical with the results analyzed by Spearman correlations and Rozell-Campbell baseline statistics.

Agenda-Setting of Internet Campaigning

This study also examined the impact of the websites on the public's agenda in assessing how they influenced the public opinion. The following research question explored the agenda-setting function of candidate websites: How do the presidential candidates' websites influence the public agenda?

Insert Figure 4 here

First, to see whether media agenda significantly set the public agenda, each media agenda at Time 1 and Time 2 were cross-lagged with public agenda at Time 2 and Time 3. Based on the Spearman correlations, the present research investigated the size of agenda-setting impact of news media on the public. Figure 4 indicates the presidential candidates' websites had some significant agenda-setting function on the public in the following time periods: the website agenda at Time 1 on the public's agenda at Time 2 (+.60); website at Time 2 on the public's agenda at Time 3 (+.76). In particular, the websites' agenda-setting function was greater than the national newspapers and the television, in both time periods chosen in this study.

As shown in Figure 4, the television agenda did not have any agenda-setting impact on the public's agenda. But newspaper coverage at Time 2 showed a significant agenda-setting impact on the public (+.67). Generally, the correlation coefficients between each media and the public were higher in the last time period of election campaigns than in the initial election campaign period.

Insert Figure 5 here

To see the path of media impact on the public's agenda, the present study regressed the public's agenda on three news media (websites, national newspaper, and television) at each time period. To begin with, Model #1 in Figure 5 revealed that candidate website at Time 1 was significantly related to the public's agenda at Time 2 (+.85). However, there was no significant relationship between the television and newspaper coverage at Time 1 and the public at Time 2. Model #2 in Figure 5 also revealed that the website exerted some significant direct impact on the public's agenda at Time 3 (+.83). However, the coefficient for national newspaper at Time 1 and Time 2, and television coverage at Time 1 and Time 2 were not statistically significant. On the other hand, there was a warning sign that multicollinearity exists when television agenda at Time 2 was regressed with television, website, and national newspaper agenda at Time 1. The tolerance statistic and variance inflation factor (VIF) in regression analysis were used to determine how much independent variable are linearly related to one another.

Overall, the two path models shown in Figure 5 indicated that candidate website agenda in the campaign initial phase had some significant direct agenda-setting impact on the public's agenda, and the agenda-setting impact persisted throughout the 2000 presidential campaign period.

Discussions

Since the 1996 presidential election campaign, political uses of the Internet have increased dramatically (e.g., Corrado, 1996; Tedesco et al., 1999; Whillock, 1997). Some studies have revealed that the online networks influence the public's exposure to campaign information as well as becoming news sources for the traditional news media (e.g., Bikson & Panis, 1996; Hacker et al., 1996; Noble, 1996; Whillock, 1997). In this context, this study was presented as an exploratory study that sought to understand agenda-setting processes in relation to other media agendas and the public's agenda in this new information age.

This study found several implications of political candidate websites on political dialogue. First, this study revealed the website campaigning can be used as a useful tool for an effective PR, since the campaign agenda of candidate websites became the subsequent agenda of the traditional news media. Second, as website agenda as new media are actively involved in the traditional media agenda, the website agenda is more likely to be associated with public agenda. Another theoretical implication regarding agenda-setting function is that online users exposed to candidate websites are more likely to learn campaign agenda than traditional media users. In addition, the path analysis regarding the website impact on the public agenda revealed that candidate websites had only direct agenda-setting impact on the public. This finding might indicate that a political candidate who wants to run a website needs to focus on direct website strategies to reach online users, as well as provide news releases for the traditional news media. Finally, the agenda-setting function shown in the later phase of the campaign was accomplished in a relatively shorter time compared to that of the initial phase. This might imply that the optimal time frame between media and public for the agenda-setting function is shortened. In particular, as new communication technologies accelerate a symbolic exchange, an immediate life and death of meaning might change the time frame involved in the agenda-setting function.

According to the study findings, the Internet-based communication has established powerful new links between politicians and voters and great impacts on the information flow of the traditional news media. In particular, the great potential of the Internet as a means of communicating with electorates is a noteworthy implication this study revealed. As computer networks are expected to grow dramatically, electronic forms of communication will close the gap between citizens and politicians, and encourage the development of more informed citizens. Thus, individual voters might increase the capacity to identify issues of common interest, so that they would enhance civic participation toward more healthy democracy.

References

Atwater, T., Fico, F., & Pizante, G. (1987). Reporting on the state legislature: A case of inter-media agenda setting. *Newspaper Research Journal, 8,* 52-61.

Becker, L. B., McCombs, M. E., & McLeod, J. M. (1975). The development of political cognitions. In S. H. Chaffee (Ed.), *Political communication* (pp. 21-63). Beverly Hills, CA: Sage.

Bikson, T. K., & Panis, C. W. A. (1996). *Computer and connectivity: Current trends* [On-line]. Available: ttp://www.rand.org/publications/MR/MR650/mr750.ch2/ch2.html.

Bobbitt, R. (1995). An internet primer for public relations. *Public Relations Quarterly, 40* (3), 27-32.

Bucy, E. P., D'Angelo, P., & Newhagen, J. E. (1999). The engaged electorate: New media use as political participation. In L. L. Kaid, & D. G. Boystrom (Eds.), *The Electronic Election: Perspectives on the 1996 Campaign Communication* (pp. 335-347). Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.

Cobb, R. W., & Elder, C. (1971). The politics of agenda-building: An alternative perspective for modern democratic theory. *Journal of Politics, 33,* 892-915.

Corrado, A. (1996). Elections in cyberspace: Prospects and problems. In A. Corrado & C. M. Firestone (Eds.), *Elections in cyberspace: Toward a new era in American politics* (pp. 1-31). Washington, DC: The Aspen Institute.

Corrado, A., & Fireston, C. M. (Eds.) (1996). *Elections in cyberspace: Toward a new era in American politics.* Washington, DC: The Aspen Institute.

Cronkite, W. (1998). Reporting presidential campaigns: A journalist's view. In D.

Graber, D. McQuail, & P. Norris (Eds.), *The politics of news: The news of politics* (pp. 57-69). Washington, DC: Congressional Quarterly Press.

Dearing, J. W., & Rogers, E. M. (1996). *Agenda-setting.* CA: Sage.

Gandy, O. (1991). Beyond agenda-setting. In D. L. Protess, & M. McCombs (Eds.), *Agenda setting: Readings on media, public opinion, and policymaking* (pp. 263-275). Hillsdale, NJ: Lawrence Erlbaum Associates.

Gans, H. J. (1979). *Deciding what's news: A study of CBS evening news, NBC nightly news, Newsweek, and Time.* New York: Pantehon Books.

Hacker, K., Howl, L., Scott, M., & Steiner, R. (1996). Uses of computer-mediated political communication in the 1992 presidential campaign: A content analysis of the Bush, Clinton, & Perot computer lists. *Communication Research Reports, 13,* 138-146.

Jamieson, K. H., & Campbell, K. K. (1997). *The interplay of influence: News, advertising, politics, and the mass media* (4th ed.). Belmont, CA: Wadsworth Publishing Company.

Kaid, L. L., & Sanders, K. R. (1984). Survey of political communication theory and research. In K. R. Sanders, L. L. Kaid, & D. Nimmo (Eds.), *Political Communication Yearbook* (pp. 283-308). IL: Southern Illinois University Press.

Klotz, R. (1997). Positive spin: Senate campaigning on the web. *Political Science & Politics, 30* (3), 482-286.

Lang, G. E., & Lang, K. (1991). Watergate: An exploration of the agenda-building process. In D. L. Protess, & M. McCombs (Eds.), *Agenda setting: Readings on media, public opinion, and policymaking* (pp. 277-289). Hillsdale, NJ: Lawrence

Erlbaum Associates.

Magolis, M., Resnick, D., & Tu, C. (1997). Campaigning on the internet: Parties and candidates on the World Wide Web in the 1996 primary season. *Press/Politics, 2,* 59-78.

McClure, R. D., & Patterson, T. E. (1976). Print vs. network news. *Journal of Communication, 26,* 23-28.

McCombs, M. E. (1977, December). *Expanding the domain of agenda-setting research: Strategies for theoretical development.* Paper presented at the annual conference of the Speech Communication Association, Washington, DC.

McCombs, M., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly, 36,* 176-187.

Meddis, S. M. (1996). *Political action on the web offers a boost to presidential campaigns* [On-line]. Available: http://www.usatoday.com/life/cyber/ccarch/cc0401.htm.

Middleberg, D. (2001). *Winning PR in the wired world.* New York, NY: McGraw-Hill.

Noble, P. (1996, July). Net the vote. *Campaigns & Elections,* 27-28.

Pelz, D. C., & Andrews, F. M. (1964). Detecting causal priorities in panel study data. *American Sociological Review, 29,* 836-848.

Protess, D. L., & McCombs, M. (Eds.). (1991). *Agenda setting: Readings on media, public opinion, and policymaking.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Reese, S. D., & Danielian, L. H. (1991). Intermedia influence and the drug issue: Converging on cocaine. In D. L. Protess, & M. McCombs (Eds.), *Agenda setting: Readings on media, public opinion, and policymaking* (pp. 237-249).

Hillsdale, N.J.: Lawrence Erlbaum Associates.

Robert, M. & McCombs, M. (1994). Agenda setting and political advertising: Origins of the news agendas. *Political Communication, 11,* 249-262.

Rogers, E. M., Dearing, J. W., & Bregman, D. (1993). The anatomy of agenda-setting research. *Journal of Communication, 43,* 68-84.

Shaw, D., & McCombs, M. (1977). *The emergence of American political issues: The agenda-setting function of the press.* St. Paul: West Publishing Co.

Tedesco, J. C., Miller, J. L., & Spiker J. A., (1999). Presidential campaigning on the information superhighway: An exploration of content and form. In L. L. Kaid, & D. G. Boystrom (Eds.), *The electronic election* (pp. 51-63). Mahwah, NJ: Lawrence Erlbaum Associates.

Tipton, L., Roger, D. H., & Baseheart, J. R. (1975). Media agenda-setting in city and state election campaigns. *Journalism Quarterly,* 15-22.

Wanta, W. (1997). The messenger and the message: Differences across news media. In M. McCombs, D. L. Shaw, & D. Weaver (Eds.), *Communication and democracy* (pp. 137-151). New Jersey: Lawrence Erlbaum Associates.

Whillock, R.K. (1997). Cyber-politics. *American Behavioral Scientist, 40,* 1208-1225.

White, D. M. (1949). The gate-keeper: A case study in the selection of news. *Journalism Quarterly, 27,* 383-390.

Table 1

Campaign News Agenda in Candidates' Websites

	Websites			Total
	Time 1	Time 2	Time 3	
Health care	1057 (29)	754 (22)	591 (21)	2402 (24)
Budget handling	649 (18)	564 (16)	503 (18)	1716 (17)
Social Security	283 (8)	596 (17)	542 (19)	1421 (14)
Taxes	305 (8)	545 (16)	341 (12)	1191 (12)
Education	380 (10)	261 (8)	360 (13)	1001 (10)
Economy	288 (8)	236 (7)	287 (10)	811 (9)
Energy policy	439 (12)	62 (2)	37 (1)	538 (5)
Crime	82 (2)	282 (8)	18 (1)	382 (4)
Environment	78 (2)	123 (4)	104 (4)	305 (3)
Defense	98 (3)	30 (1)	44 (2)	172 (2)
Total	3659 (100)	3453 (100)	2827 (100)	9939 (100)

Note. The values represent the frequency of the campaign agenda-related key words in Bush and Gore's Websites. The values in the parentheses show the percentage of the agenda values within each time period.

Time 1 = September 20 to 28; Time 2 = October 12 to 20; Time 3 = October 27 to November 6.

Table 2

Campaign News Agenda in National Newspaper

	National newspapers			Total
	Time 1	Time 2	Time 3	
Energy policy	491 (21)	28 (1)	64 (2)	583 (8)
Economy	442 (19)	310 (16)	221 (8)	879 (13)
Health care	399 (17)	321 (16)	403 (15)	1123 (16)
Education	257 (11)	190 (10)	670 (25)	1117 (16)
Crime	173 (8)	151 (8)	148 (6)	472 (7)
Budget handling	148 (6)	327 (17)	319 (12)	794 (12)
Defense	147 (6)	69 (4)	71 (3)	287 (4)
Taxes	130 (6)	256 (13)	266 (10)	652 (9)
Social Security	70 (3)	225 (11)	303 (12)	598 (9)
Environment	42 (2)	107 (5)	175 (7)	324 (5)
Total	2299 (100)	1984 (100)	2640 (100)	6923 (100)

Note. The values represent the frequency of the campaign agenda-related key words in the two national newspapers. The values in the parentheses show the percentage of the agenda values within each time period. Time 1 = September 20 to 28; Time 2 = October 12 to 20; Time 3 = October 27 to November 6.

Table 3

Campaign News Agenda in Local Newspaper

	Local newspapers			Total
	Time 1	Time 2	Time 3	
Energy policy	229 (28)	49 (7)	19 (2)	297 (12)
Health care	180 (22)	96 (13)	74 (8)	350 (14)
Economy	91 (11)	86 (11)	114 (13)	291 (12)
Taxes	74 (9)	86 (11)	122 (13)	282 (11)
Education	72 (9)	104 (14)	153 (17)	329 (13)
Budget handling	59 (7)	87 (12)	121 (13)	267 (11)
Crime	39 (5)	73 (10)	132 (15)	244 (10)
Environment	31 (4)	26 (3)	63 (7)	120 (5)
Social Security	27 (3)	110 (15)	97 (11)	234 (9)
Defense	21 (3)	37 (5)	13 (1)	71 (3)
Total	823 (100)	754 (100)	908 (100)	2485 (100)

Note. The values represent the frequency of the campaign agenda-related key words in the two regional newspapers. The values in the parentheses show the percentage of the agenda values within each time period. Time 1 = September 20 to 28; Time 2 = October 12 to 20; Time 3 = October 27 to November 6.

Table 4

Campaign News Agenda in Television

	Televisions			Total
	Time 1	Time 2	Time 3	
Energy policy	1770 (45)	0 (0)	0 (0)	1770 (19)
Health care	904 (23)	0 (0)	250 (9)	1154 (13)
Economy	884 (23)	420 (19)	247 (9)	1551 (17)
Education	310 (8)	893 (38)	148 (5)	1351 (15)
Defense	30 (1)	0 (0)	0 (0)	30 (0)
Crime	0 (0)	152 (7)	36 (1)	188 (2)
Budget handling	0 (0)	572 (24)	876 (31)	1448 (16)
Taxes	0 (0)	0 (0)	282 (10)	282 (3)
Social Security	0 (0)	318 (14)	1006 (35)	1324 (15)
Environment	0 (0)	0 (0)	22 (1)	22 (0)
Total	3898 (100)	2355 (100)	2867 (100)	9120 (100)

Note. The values represent the time (sec.) of the campaign issue agenda aired through the three televisions. The values in the parentheses show the percentage of the agenda values within each time period. Time 1 = September 20 to 28; Time 2 = October 12 to 20; Time 3 = October 27 to November 6.

Table 5

Additional Analysis of Correlations between Website and Traditional News Media across Time

I.	Website <Time 1> → Television <Time 2>		
	A.	Cross-lag correlation (zero-order):	+.16
	B.	First-order partial correlation controlling for the dependent variable, television news, at Time 1:	+.27
	C.	First-order partial correlation controlling for the other major influence identified in this study, national newspaper's news, at Time 1:	+.09
	D.	Second-order partial correlation controlling for both television and national newspaper's news at Time 1:	+.15
II.	Website <Time 1> → NP <Time 2>		
	A.	Cross-lag correlation (zero-order):	+.53
	B.	First-order partial correlation controlling for the dependent variable, national newspaper's news, at Time 1:	+.61
	C.	First-order partial correlation controlling for the other major influence identified in this study, television news, at Time 1:	+.71
	D.	Second-order partial correlation controlling for both national newspaper and television news at Time 1:	+.68
III.	Website <Time 1> → Television <Time 3>		
	A.	Cross-lag correlation (zero-order):	+.35
	B.	First-order partial correlation controlling for the dependent variable, television news, at Time 1:	+.72
	C.	First-order partial correlation controlling for the other major influence identified in this study, national newspaper's news, at Time 1:	+.63
	D.	Second-order partial correlation controlling for both television and national newspaper's news at Time 1:	+.71
IV.	Website <Time 1> → NP <Time 3>		
	A.	Cross-lag correlation (zero-order):	+.39
	B.	First-order partial correlation controlling for the dependent variable, national newspaper's news, at Time 1:	+.43
	C.	First-order partial correlation controlling for the other major influence identified in this study, television news, at Time 1:	+.47
	D.	Second-order partial correlation controlling for both national newspaper and television news at Time 1:	+.45

V.	Website <Time 2> → Television <Time 3>		
	A.	Cross-lag correlation (zero-order):	+.88
	B.	First-order partial correlation controlling for the dependent variable, television news, at Time 2:	+.88
	C.	First-order partial correlation controlling for the other major influence identified in this study, national newspaper's news, at Time 2:	+.65
	D.	Second-order partial correlation controlling for both television and newspaper's news at Time 2:	+.69
VI.	Website <Time 2> → NP <Time 3>		
	A.	Cross-lag correlation (zero-order):	+.67
	B.	First-order partial correlation controlling for the dependent variable, national newspaper news, at Time 2:	-.22
	C.	First-order partial correlation controlling for the other major influence identified in this study, television news, at Time 2:	+.65
	D.	Second-order partial correlation controlling for both national newspaper and television news at Time 2:	-.22

Note. The values represent the zero-order and partial correlation coefficients between two variables and between two variables after controlling other variable(s).

Time 1 = September 20 to 28; Time 2 = October 12 to 20; Time 3 = October 27 to November 6. NP = national newspaper.

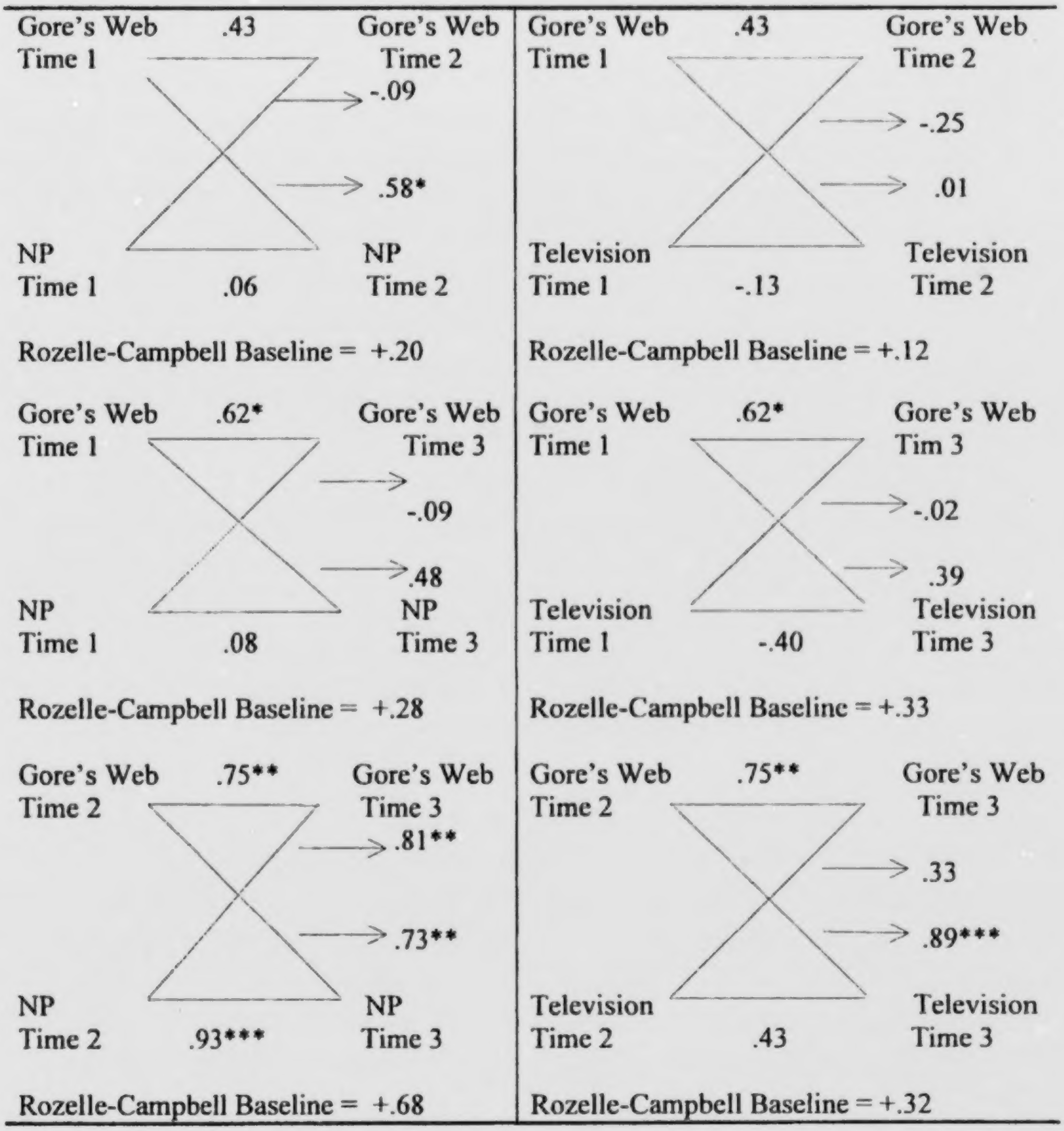

Gore's Web Time 1
.43
Gore's Web Time 2
-.09
.58*
NP Time 1
.06
NP Time 2
Rozelle-Campbell Baseline = +.20
Gore's Web Time 1
.43
Gore's Web Time 2
-.25
.01
Television Time 1
-.13
Television Time 2
Rozelle-Campbell Baseline = +.12
Gore's Web Time 1
.62*
Gore's Web Time 3
-.09
.48
NP Time 1
.08
NP Time 3
Rozelle-Campbell Baseline = +.28
Gore's Web Time 1
.62*
Gore's Web Tim 3
-.02
.39
Television Time 1
-.40
Television Time 3
Rozelle-Campbell Baseline = +.33
Gore's Web Time 2
.75**
Gore's Web Time 3
.81**
.73**
NP Time 2
.93***
NP Time 3
Rozelle-Campbell Baseline = +.68
Gore's Web Time 2
.75**
Gore's Web Time 3
.33
.89***
Television Time 2
.43
Television Time 3
Rozelle-Campbell Baseline = +.32

Figure 1. Results of cross-lagged comparison between Gore's website and the traditional media agendas. Time 1 = September 20 to 28; Time 2 = October 12 to 20; Time 3 = October 27 to November 6. NP = national newspaper.

**p* < .05; ***p* < .01; ****p* < .001.

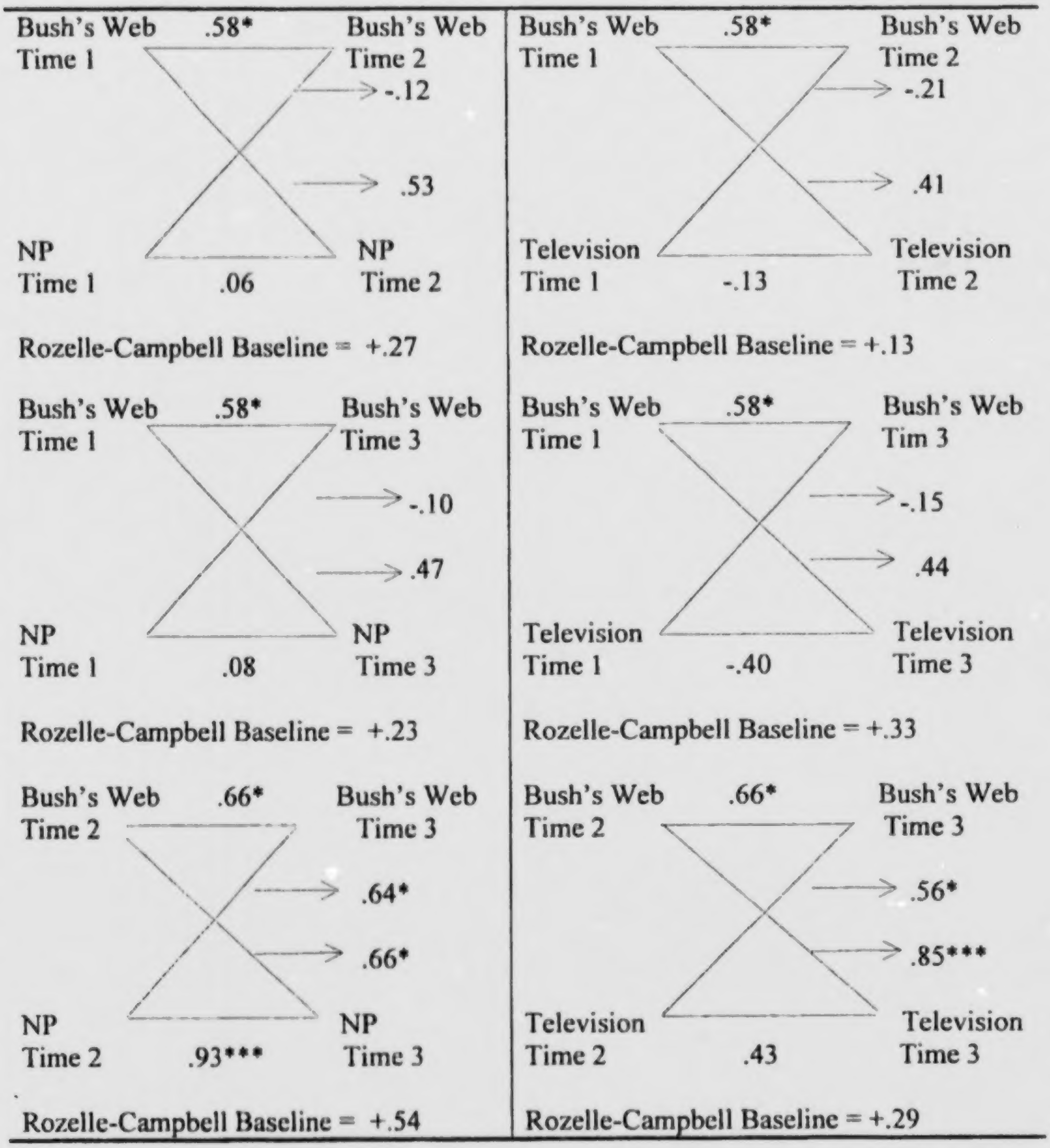

Bush's Web
Time 1
.58*
Bush's Web
Time 2
-.12
.53
NP
Time 1
.06
NP
Time 2
Rozelle-Campbell Baseline = +.27
Bush's Web
Time 1
.58*
Bush's Web
Time 2
-.21
.41
Television
Time 1
-.13
Television
Time 2
Rozelle-Campbell Baseline = +.13
Bush's Web
Time 1
.58*
Bush's Web
Time 3
-.10
.47
NP
Time 1
.08
NP
Time 3
Rozelle-Campbell Baseline = +.23
Bush's Web
Time 1
.58*
Bush's Web
Tim 3
-.15
.44
Television
Time 1
-.40
Television
Time 3
Rozelle-Campbell Baseline = +.33
Bush's Web
Time 2
.66*
Bush's Web
Time 3
.64*
.66*
NP
Time 2
.93***
NP
Time 3
Rozelle-Campbell Baseline = +.54
Bush's Web
Time 2
.66*
Bush's Web
Time 3
.56*
.85***
Television
Time 2
.43
Television
Time 3
Rozelle-Campbell Baseline = +.29

Figure 2. Results of cross-lagged comparison between Bush's website and the traditional media agendas. Time 1 = September 20 to 28; Time 2 = October 12 to 20; Time 3 = October 27 to November 6. NP = national newspaper.

*$p < .05$; **$p < .01$; ***$p < .001$.

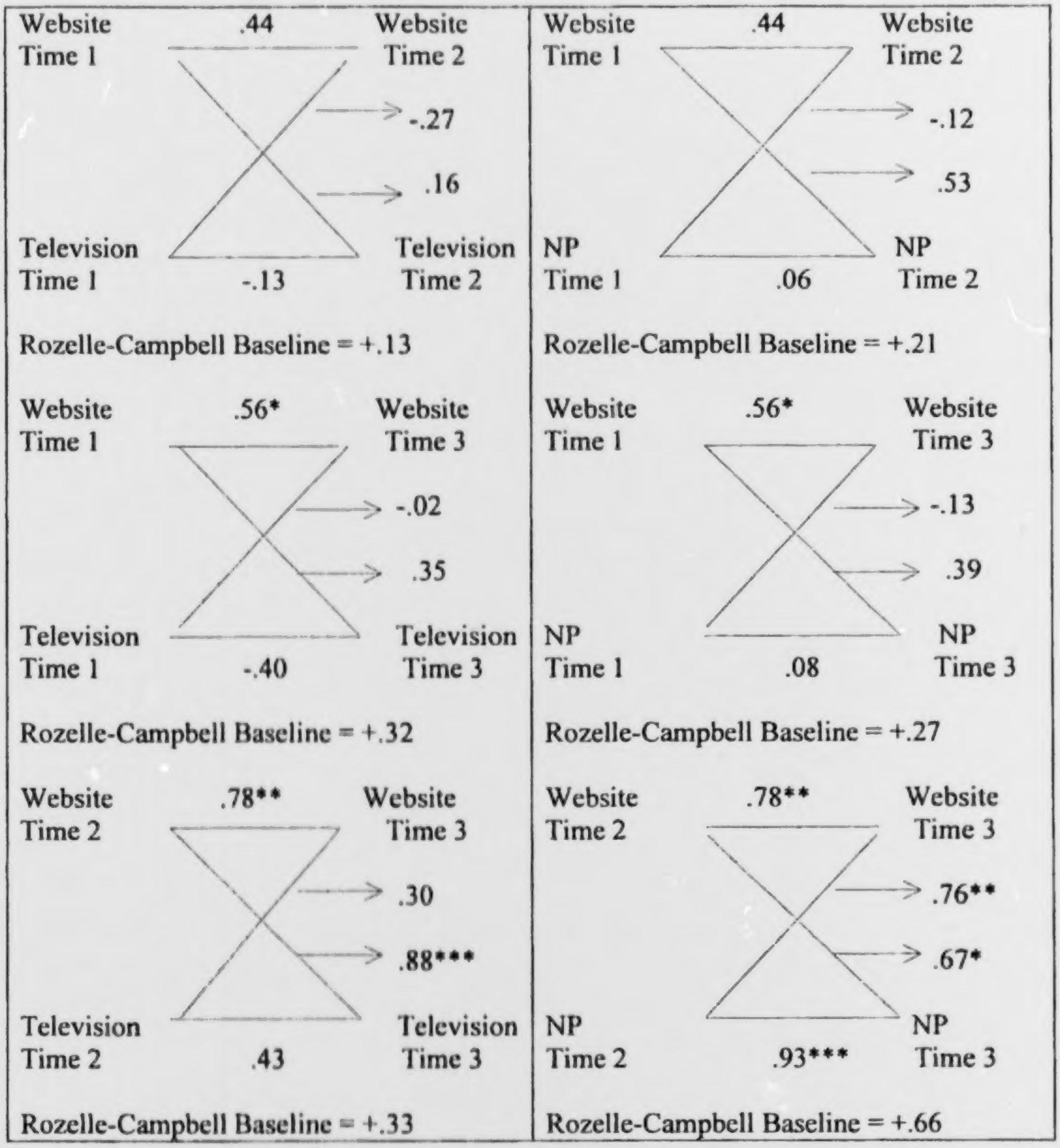

Website Time 1
.44
Website Time 2
-.27
.16
Television Time 1
-.13
Television Time 2
Rozelle-Campbell Baseline = +.13
Website Time 1
.44
Website Time 2
-.12
.53
NP Time 1
.06
NP Time 2
Rozelle-Campbell Baseline = +.21
Website Time 1
.56*
Website Time 3
-.02
.35
Television Time 1
-.40
Television Time 3
Rozelle-Campbell Baseline = +.32
Website Time 1
.56*
Website Time 3
-.13
.39
NP Time 1
.08
NP Time 3
Rozelle-Campbell Baseline = +.27
Website Time 2
.78**
Website Time 3
.30
.88***
Television Time 2
.43
Television Time 3
Rozelle-Campbell Baseline = +.33
Website Time 2
.78**
Website Time 3
.76**
.67*
NP Time 2
.93***
NP Time 3
Rozelle-Campbell Baseline = +.66

Figure 3. Results of cross-lagged correlation coefficients and the Rozelle-Campbell baseline between website and traditional news media across time.

Time 1 = September 20 to 28; Time 2 = October 12 to 20; Time 3 = October 27 to November 6. NP = national newspaper. *$p < .05$; **$p < .01$; ***$p < .001$.

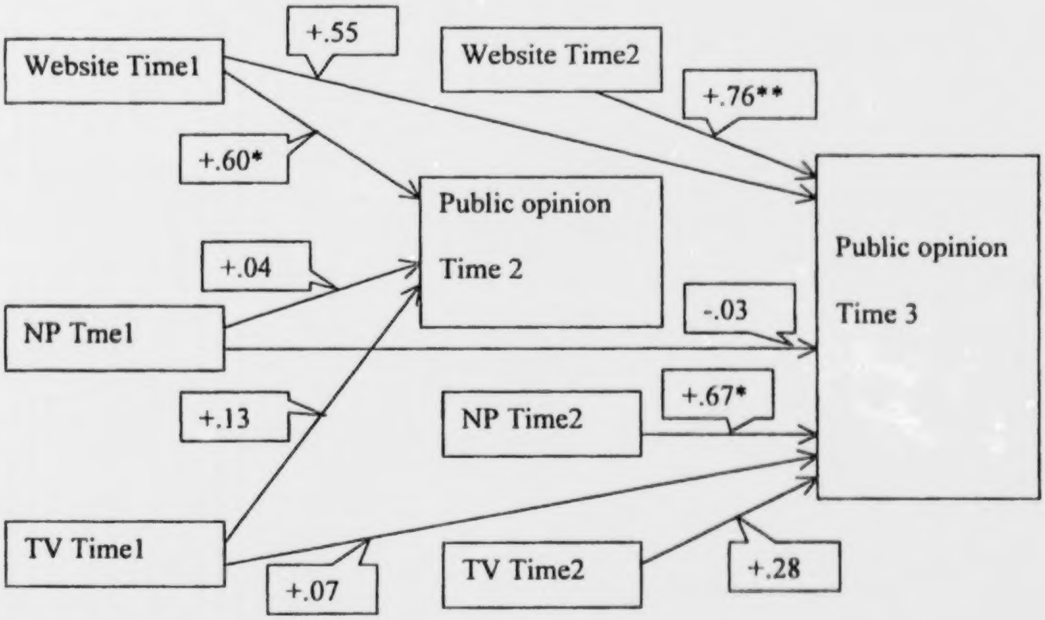
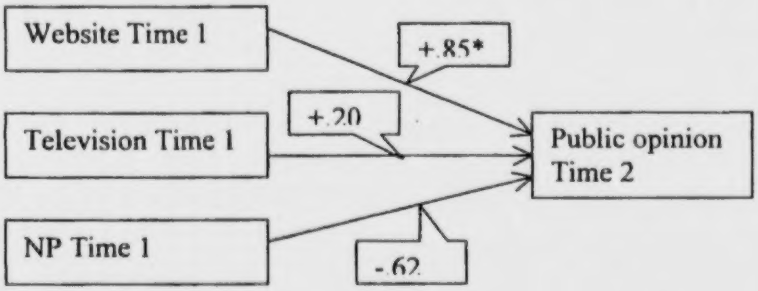

Website Time1
+.55
Website Time2
+.76**
+.60*
Public opinion Time 2
Public opinion Time 3
+.04
NP Tme1
-.03
+.13
+.67*
NP Time2
TV Time1
+.07
TV Time2
+.28

Figure 4. Agenda-setting function of news media on public opinion across time.

The values represent the Spearman correlation coefficients between media and public across time. Time 1 = September 20 to 28; Time 2 = October 12 to 20; Time 3 = October 27 to November 6. NP = national newspaper. *$p < .05$; **$p < .01$.

Model #1


Website Time 1
+.85*
+.20
Television Time 1
Public opinion Time 2
NP Time 1
-.62

Model #2

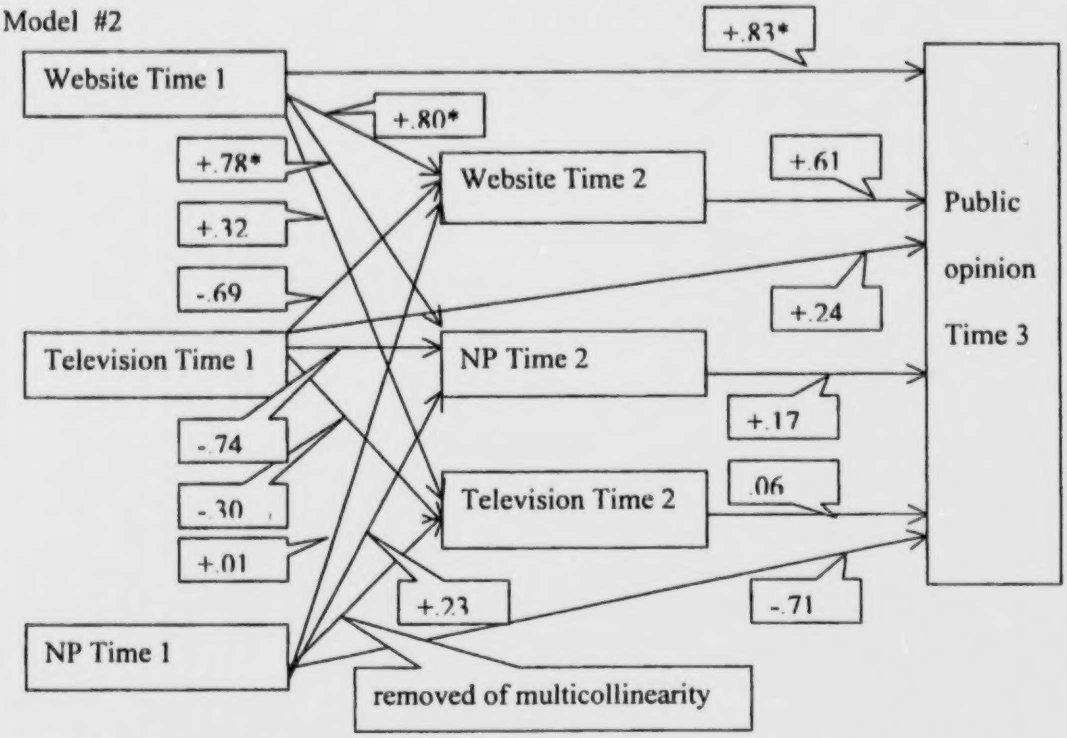

+.83*
Website Time 1
+.80*
+.78*
Website Time 2
+.61
+.32
Public opinion Time 3
-.69
+.24
Television Time 1
NP Time 2
-.74
+.17
-.30
Television Time 2
.06
+.01
+.23
-.71
NP Time 1
removed of multicollinearity

Figure 5. Path diagram depicting agenda-setting function of news media on public opinion across time.

The values represent standardized path coefficients between media and public across time. Time 1 = September 20 to 28; Time 2 = October 12 to 20; Time 3 = October 27 to November 6. NP = national newspaper. *$p < .05$.

Appendix

Media Agenda (Media issue and issue related words)

* Each word might include other related words, covering single, plural, and derivative. If letters 'pharmac' is entered into 'Find in Edit' function of MS Words, the program searches for all connected words such as **pharmacy**, **pharmac**eutics, **pharmac**iest, etc.

* Other keywords were checked through one newspaper and one website at one time period. When the words did not have over five hits, the words were excluded in the analysis.

- Healthcare: health care, drug, prescription, medicine, doctor, medicare, medicaid, medication, pharmacy, H.M.O (HMO(s)), insurance, patient, disease, CHIP.
- Social Security: Social Security, benefits, beneficiary, retirement, welfare.
- Energy policy: OPEC, oil, gas, petroleum, gasoline, energy, fuel, crude.
- Education: education, school, student, enrollment, tuition, college, university.
- Economy: business, economy, industry, market, invest, company, job, interest rates, R & D (research and development).
- Tax: tax, marriage penalty.
- Environment: environment, pollute, air.
- National Defense: security, defense, military, army.
- Handling budget: budget, spending, fund, surplus, debt, deficit, solvent.
- Crime: crime, criminal, violence, gun, police, law enforcement.

CTYM

Running head: Priming Effects Revisited

Priming Effects Revisited:

Use and Disuse of Contextual Primes in Dynamic News Environments

Young Mie Kim

Doctoral Student
University of Illinois at Urbana-Champaign
244 Lincoln Hall
702 S. Wright St.
Urbana, IL 61801

E-mail: ymkim1@uiuc.edu

Paper presented at the annual meeting of the 2002 AEJMC, August 7-10, Miami Beach, FL

The author would like to thank Scott Althaus and David Tewksbury for their helpful comments.

Priming Effects Revisited:

Use and Disuse of Contextual Primes in Dynamic News Environments

Abstract

This study reexamines priming effects in the case of the 1991 Persian Gulf War. As an alternative approach to traditional priming research, this study suggests an attitude structure model of priming based on an associative network model to assess people's use and disuse of a contextual prime (i.e., the air war) in dynamic news environments. With a short-term quasi-experimental approach considering the air war as a prime stimulus, a path analysis of the attitude structure model suggests robust evidence of short-term accessibility effects of priming. This study extends priming effects beyond hydraulic patterns, based on Martin's (1986) set/reset model. In contrast to hydraulic patterns predicted by the existing news priming effects literature, this study reveals that both attitudes toward military action and attitudes toward diplomatic solutions were used in subsequent judgments of the president's handling of the war and job performance. The associations between attitudes toward a diplomatic solution and subsequent judgments were even stronger than those between attitudes toward military action and the same subsequent judgments, despite the clear pro-war primes of news discourse in the air war context. This pattern was more intensified among people in a high news exposure group than those in a low news exposure group. Implications of these findings are discussed.

Priming Effects Revisited:

Use and Disuse of Contextual Primes in Dynamic News Environments

The 1991 Persian Gulf War was a momentous event from the perspective of public opinion research. It changed the American public's confidence in the U. S. military; it also influenced the public's attitude toward Israel and other Middle Eastern nations. Public opinion dramatically changed following the major events of the War. The most impressive change in public opinion during the war was the evaluation of George Bush's performance. In October 1990, just before the war began, the general approval rating for Bush was moderate, at about 55 percent of those surveyed expressing approval of the president. However, after the war began on January 16, 1991, the approval rating increased to 82.9% (the *CBS/New York Times* Persian Gulf War Poll, 1990-1991). Although the approval rating declined a bit later, the dramatic increase in presidential approval is enough to draw attention of public opinion scholars.

Some explanations have been offered in previous research. One possible explanation for the increased presidential approval is the simple success of the military alliance, ending the Iraqi occupation of Kuwait (see Krosnick & Brannon, 1993). If this was all that drove the approval increase, however, it is puzzling why the rise began in January, just after the war began, but not before it was clear that U.S. efforts would be successful. Mueller (1994) offers another possible explanation--namely, the "rally around the flag effect" (for further discussion, see Brody, 1991; Oneal & Bryan, 1993), which has been characterized as "a way of accounting for otherwise inexplicable rises in support for the president in the face of surprise and threat." Such an effect occurs when international and dramatic crises become a threat to consensus values. Although the rally around the flag effect might effectively identify the results of elite consensus[1], it underestimates and simplifies the role of mass media in opinion formation and does not adequately specify the psychological processes at work. For instance, how might mass media have influenced public opinion, and how is public opinion developed and changed?

The most widely accepted explanation, at least until now, is the priming effect theory. Researchers have argued that the news media "prime" people with the elements that will be used in assessing presidential performance (e.g., Iyengar & Kinder, 1987; Krosnick & Kinder, 1990; Krosnick & Brannon, 1993; Miller & Krosnick, 1996, 2000). The news media's emphasis on a certain political issue increases the likelihood that the issue will be accessible when people are asked to evaluate the president (Iyengar & Kinder, 1987). People think about the issues the news media emphasize and use accessible knowledge in that domain as criteria in making judgments about the president. If the news media highlight the military action of the Gulf War, people use their knowledge and attitude toward military action as a foundation for their evaluation of the president's overall job performance.

Despite their popularity, studies on the news media's priming effects have not taken full advantage of the implications of priming studies in psychology. First of all, studies on the news media's priming effect have tested only hydraulic patterns of accessibility effects (i.e., a comparison of the evaluation of a particular issue, which is extensively covered by news media, to the evaluation of another particular issue, which is not extensively covered by news media), failing to identify potential associative attitude structures, even though theories in psychology have clearly emphasized the association effects (see later sections in this paper, also Higgins, 1984) as well as the accessibility effects of priming. Also, the applicability of concepts primed by the news media have been considered only in terms of congruent category matches, which assume that a concept was used to interpret information only when the concept and the evaluation had the same meaning. Related to these problems, previous priming effects studies have heavily emphasized passive information processes influenced by a dominant "big message" of from the mass media, even though people might or might not use contextually primed ideas in their associations during information processing. Also, previous studies have simply presumed a unidimensional information environment, a so-called "big message effect" (Pan & Kosicki, 1997) or "mainstream effect" (Zaller, 1992), ignoring the dynamics and complexities of the information disseminated by news media in the real world. Finally, the replications of priming effects in the real world have been limited to comparisons of long-term period effects (e.g., the Gulf War period vs. the economic recession period), presuming one big message for a long-time.

Embracing these concerns, this study explores the attitude structure that priming effects produce in the complex media environment. Using panel data from the Gulf War, this study identifies the domains of relevant attitudes in making political judgments and examines their relationships. This analysis takes into account the dynamic and complex news environments where conflicting ideas are presented by mass media. Through this, the present study extends priming effects beyond the simple hydraulic patterns of accessibility effects, and reveals how people associate or dissociate (use or not use) contextual primes in the dynamic information environment. By taking a quasi-experimental approach, this study also investigates whether even short-term priming effects occur in the real world.

Previous Research on Priming Effects

Priming refers to procedures that stimulate or activate stored knowledge (Higgins, 1996; Higgins, Bargh, & Lombardi, 1985; Higgins & King, 1981). Priming activates knowledge constructs, which temporarily increases their accessibility in memory. Higgins and King (1981) suggest that accessibility is a function of frequency and recency. A recently activated construct is likely to be activated in subsequent tasks because it briefly carries at a high level of excitation (Higgins, Bargh & Lombardi, 1985). A frequently activated construct is also likely to be activated even when there is a time delay between the prime and subsequent tasks. The temporary ease with which this construct can be called up into working memory increases the likelihood that the activated construct will be used as the basis for making subsequent evaluations (Higgins, 1996). In this sense, priming effects are accessibility effects since the activation potential of stored knowledge (i.e., accessibility, Higgins, 1989; Higgins, 1996) is used in subsequent judgmental tasks, either consciously (i.e., active priming process) or unconsciously (i.e., passive priming process).

The priming effects of news coverage were originally documented by Iyengar and Kinder's (1987) agenda-setting study. In the course of a series of experiments, Iyengar and

Kinder found that if news media emphasized a specific performance by the president, people were more likely to evaluate the president's general performance based on the evaluation of that specific aspect. Based on their findings, Iyengar and Kinder (1987) defined priming effects as "changes in the standards that people use to make political evaluations" (Iyengar & Kinder, 1987, p.63). By drawing attention to some aspects of an event while ignoring others, the news media influences the criteria by which the president, governments, and policies are judged (Iyengar & Kinder, 1987, p.63; Iyengar & Simon, 1997).

Bolstering researchers' confidence in the presence of priming effects in the real world, Krosnick and Kinder (1990) replicated the priming effect in the context of the Iran-Contra revelation. In addition, they compared the impact of a series of Iran-Contra-related evaluations to that of unrelated evaluations, such as evaluations of the national economy and of federal assistance program for African-Americans. Consistent with the priming theory, Krosnick and Kinder found that the news media's dominant coverage of Iran-Contra altered the foundations of general evaluations of the president---while the relative impact of related evaluations were increased, those of unrelated evaluations were decreased or remained unchanged. The priming effect is an accessibility effect of available knowledge constructs stimulated by some salient issue, that is, a function of the activation potential of existing knowledge. In this sense, priming studies have stressed the resonance of issue salience and existing knowledge constructs.[2]

Although the previous literature has well documented the existence of accessibility effects brought on by the news media, another important aspect of priming effects has been almost neglected: association effects. As priming increases the accessibility of a particular construct, it also increases the likelihood that the construct will be used later to identify an object. Thus, evaluative impressions of some object might be based in part on a connotative similarity with the construct. To the extent that a stimulus and a stored knowledge construct are applicable, other related ideas or knowledge constructs are also charged. Given this, Higgins clarifies that priming effects are initially accessibility effects, but then subsequent evaluative impression formations are inference effects (i.e., association effects), since each priming episode generates associations between the primed constructs and other constructs, stimuli, or judgmental contexts (Higgins, 1996; Higgins & King; 1981).

One of the most important implications of association effects is that in this inference process, people can *dissociate* the relations between a prime stimulus and subsequent judgment tasks either consciously or unconsciously. Although the original priming studies have heavily emphasized the assimilation effects of priming--association effects based on the denotative similarity of primes and judgment targets--, recent works has started to pay attention to situations in which a concept other than the primed concept will be used in subsequent judgments (Higgins, 1996; Martin, 1986; Martin & Achee, 1992; Martin, Seta, & Crelia, 1990). Martin and Achee (1992) point out that the previous models of priming effects have emphasized association effects in terms of category matching metaphors, which circumscribe the features that determine the applicability of priming. Martin argues that people have many sources of information that they can use at any given time and all of this information can play important roles in judgment making at one time or another. However, not of all the information comes into play for each and every judgment--people are selective in their use of information. Under some conditions, people do not associate a stimulus prime with their judgment. Instead, they partial out or suppress the contextual influence and attempt to use their own context-independent attitude in making a judgment of a target, which leads to a contrast effect. Martin calls this partialing out of reactions a "resetting effect," while he defines a shift toward a contextual prime as a "setting effect." Later studies have revealed that contrast effects or resetting effects would occur, despite the accessibility and applicability of contextual primes, when motivations for making one's own judgments are high, when one's own criteria are strong enough, when stimulus primes are blatant, or when one is aware of being primed (e.g., Lombardi et al., 1987; Martin, 1986; Martin et al., 1990; Moskowitz & Roman, 1992).

Martin's (1986) set/reset model suggests that the frequency and recency of accessibility and the denotative similarity of applicability at the time of priming should not be the only factors in determining priming effects. Individuals have stop-rules that determine their use and disuse of primed information (Martin calls the stop-rules "appropriateness," Strack, Martin, & Schwarz, 1988). In the course of forming judgments, people attempt to interpret the target information and report on their reactions to that information. When people decide the primed concept is not appropriate for making a judgment, they attempt to retrieve an alternate from their existing attitude or knowledge structure. Cues in a priming setting can prompt individuals to use or not use primed concepts, which help with retrieving prime-independent information. In this sense, the set/reset model employs a sifter metaphor rather than a category matching metaphor (Martin & Achee, 1992). People do not use the primed information simply because it is accessible and applicable in terms of similarity. People sift through their thoughts and beliefs and attempt to partial the relevant from the irrelevant information.

Methodologically, or even theoretically in some cases, studies in the news priming literature have not fully taken advantage of the notion of these association/dissociation effects of priming. Studies have limited their search for priming effects to the attitude structures of a single dependent variable rather than expanding their focus to the attitude structure of multiple independent or dependent variables that are theoretically and semantically related to one another. For example, Iyengar and Kinder (1987) operationally defined priming as the difference between the regression coefficient of a baseline (i.e., the impact of the evaluation of handling of a particular problem on the evaluation of the president's overall job performance when the stimulus news did not cover the problem) and of an experimental treatment (i.e., the impact of the evaluation of the handling of a particular problem on the evaluation of the president's overall job performance when the news covered the problem) in the same multiple regression equation. Since Iyengar and Kinder's original study, almost every study of the priming effects of the news media (e.g., Iyengar & Simon, 1997; Krosnick & Kinder; 1990; Krosnick & Brannon, 1993, 1995) has focused on the hydraulic patterns--comparison of the evaluation of an extensively covered by the news media to the evaluation of an issue *not* extensively covered by the news media. Only Miller and Krosnick (1992) pointed out association effects in their theoretical explanations of priming by proposing a "gradient hypothesis." When a specific attitude is called to mind (i.e., an accessibility effect), activation of this attitude spreads to other attitudes (i.e., an association effect). However, Miller and Krosnick are still limited by their method to a hydraulic pattern regarding the relative importance of selected media issues on a single dependable variable.

This previous method contains an important omission, especially in as much as it fails to clarify and develop association/dissociation or set/reset effects of news media priming. In the real world, it is often the case that contextual primes do not unanimously shift people's judgments toward primed concepts as suggested by congruent category matching metaphors. In the face of contextual influences, it is not so clear whether people will still observe the hydraulic patterns of priming effects even if they examine *relevant but competing* ideas instead of comparing relevant and irrelevant ideas. It has been argued that in reality, people have ambivalent attitudes toward most political policies or political figures, both of which are applicable to making political judgments but conflicting with each other (Zaller & Feldman, 1992). Given that priming effects occur by resonating with the structure of conflicting ideas (Martin & Achee, 1992), it is important to examine how people use or do not use primed concepts in the course of sifting through conflicting ideas. Considering that both pro- and con-war attitudes were applicable and accessible in evaluating the president's handling of the war and even his general job performance, it would be more interesting to examine how these two conflicting or competing attitudes were used or not used in response to situational changes rather than to replicate whether evaluations of the Gulf War, instead of evaluations of economy, are used in judgments of the president's job performance.

The importance of reassessing priming in terms of assimilation/contrast effects becomes more evident if we take into account our news media environment. Although most studies have argued that the content of the media causes people to use the issue in the criteria of political judgments, surprisingly enough, no study has paid attention to the dynamics and complexities of the information presented by the news media. The specific content and tone of news messages have been reduced to simple one-dimensional conceptualizations of media information (e.g., "the coverage about the war in general."). This notion of a "big message effect" (Pan & Kosicki, 1997) or "mainstream effect" (Zaller, 1992) has limitations in explaining media influence in the context of a complex information environment, where conflicting ideas often compete with each other. For instance, previous models made no allowance for changes in priming effects brought about by news discourse that is substantially in support of the president versus news coverage that is unreservedly critical of presidential performance. Empirical research on such effects has yet to examine whether shifts in media discourse might unanimously occur in terms of the structure of priming effects. Given that a priming effect is the resonance of dynamic and complex information with people's existing attitude structure (Higgins, 1996, Krosnick & Kinder, 1990), the assumption of a unidimensional information environment may lead researchers to miss important features of priming effects such as set/reset effects and the psychological mechanism through which dynamic priming effects occur.

In line with the big message effect approach, priming effects in the real world have been explored in terms of long-term period effects. For example, Kosnick and Brannon (1993) compare a sample of the November 1990-January 1991 data---when major events in the Gulf War were occurring--- to those from the June-July 1991 data, long after the military action. Pan and Kosicki (1997) used 1990-1991 National Election Study (NES) data for the Gulf War period and 1992 NES data for the post Gulf War period. Although findings of long-term priming effects are enough to make a substantially important point, this approach might have invited some confounded effects given that for such a long period, there might have been a lot of changes in the context in which people made their judgments. Moreover, these kinds of long-term approaches might limit our understanding of priming effects. As Price and Tewksbury (1997) illustrate, priming effects are basically temporary effects of information processing. However, findings of previous studies have not examined the temporary effects of the ebb and flow of communication presented by news media outside laboratories, focusing instead on a dominant message over a long period of time.

Attitudes Structure Model of Priming: The Case of the Gulf War

The present study suggests an alternative approach to reassess priming effects during the Gulf War. Rather than making a comparison of weights between relevant (e.g., approval of foreign affairs) and irrelevant domains of attitudes (e.g., approval of economy) in evaluating the president's overall performance, the present study identifies the sub-domains of all potentially relevant attitudes in evaluating the president's general performance during the Gulf War (even though they are conflicting with each other) and construct a set of these attitudes, namely an attitude structure of priming. Through this, the present study will explore the associative relationships and their strengths among those attitudes and compare the changes of the pre- and the post air war attitude structures in their associations and strengths. By virtue of constructing an attitude structure model of priming, the present study assesses priming effects beyond simple accessibility and applicability effects in a congruent category match paradigm. The present study examines how people use or do not use contextually primed ideas in a dynamic and complex news environment and how the use and disuse of primed information resonates with receivers' preexisting attitude structures.

This model is theoretically grounded in an associative network model, one of the most compelling information processing models in social cognition research, proposed by Anderson (i.e., ACT*; 1983). According to the ACT* model, constructs are linked nest of networks (Anderson, 1983). Each knowledge construct may hold a position, or even multiple positions in one or more nests of the network. Each construct is a node that connects to other constructs creating a nest of cognitive networks. Once one of the nodes (a knowledge construct) is charged (i.e., activated), the excitation of the node spreads to other nodes with which it is associated and facilitates their activation. Within this representative network structure, knowledge activation is a function of the strength of the associations between ideas. The more the excitations are charged, the more the nodes are primed (Higgins, Bargh, & Lombardi, 1985), spreading through the network. The more deeply embedded a node is within cognitive networks, the more its activation is likely to spread through additional nodes (Anderson, 1983; Higgins et al., 1977; Higgins et al., 1985; Price & Tewksbury, 1997). Thus, for a better understanding of the strength of a priming effect, studies need to pay attention to the scope of the spreading of activated knowledge by looking at the structure of judgment-relevant knowledge constructs as well as associations between the knowledge constructs and the judgment tasks.

For the first step in constructing an attitude structure model, the present study took a look at the amount of news media coverage of the Gulf War in order to determine whether the Gulf War was salient enough to form any attitude structures. Network evening news coverage of the Gulf War grew after the end of December 1990 and peaked at 47 stories on January 17, 1991 (Althaus, 2000). The average number of lines per day devoted to the Gulf War on the front page of the *New York Times* also increased to about 500 lines during mid-January 1991 (Krosnick & Brannon, 1993). Citizens' attention to the news coverage (i.e., the percentage of the people "following news very closely") also increased, from about 40 percent at the pre air war stage to about 76 percent at the post-air war stage (*CBS/New York Times* Persian Gulf War Poll, 1991). Given this, the present study assumes that the Gulf War would be salient enough in the public's mind.

Subsequently, given that memories are built up from links and associations between pairs of stimuli (Anderson, 1983), and that knowledge activation spreads throughout the nodes, it is important to pinpoint what would be the relevant domains of the Gulf War attitude structure. Such a task is crucial for identifying the sub-dimensional attitudes of priming and, ultimately, to understanding the association effect of priming (Zaller, 1992).[3] In addition, this tasks allows us to examine whether even logically applicable but different tone of ideas would induce the same patterns of priming effects.

According to Althaus' (2000) content analysis of Gulf War news coverage, two themes of the war were widely discussed throughout the entire Gulf War period: "pro-force (i.e., military action; 51.2% of the news contents during the entire Gulf War)" and "con-force (i.e., diplomatic solution, 32.6%)" themes. Given that those con and pro force themes constituted the most important and widely discussed policy alternatives available to the Bush administration, it is reasonable to argue that attitudes toward those two policy options for the Gulf War--military action vs. a diplomatic solution--were the most relevant sub-dimensions of the evaluation of the president's handling of the Gulf War. Thus, the present study takes these two attitudes as sub-dimensional attitudes of the evaluation of Bush's handling of the Gulf War, which subsequently influenced approval of the president's overall job performance. Indeed, as explained earlier, associative network theory suggests that the scope of effect depends on the strength of initially charged attitudes. The stronger they are, the more other attitudes are charged (Anderson, 1983; Miller & Krosnick, 1996). Also, the stronger the initially charged attitudes are, the further other attitudes are also charged. Thus, the present model adds direct paths from attitudes toward a diplomatic solution and military action to the overall evaluation of the president because they might influence the evaluation of the president's overall job performance directly (if they are strong enough). In sum, the model of the attitude structure of priming is illustrated in Figure 1.

Figure 1 is about here

The present study takes a quasi-experimental approach. Considering the start of the air war (January 16th) as a contextual stimulus, this study will examine the changes in associations and strengths between attitude structures before the air war (the pre war stage: January 5th -7th panel) and after the air war (the post war stage: January 17th panel). This approach is useful to examining whether short-term priming effects exist outside laboratories as Price and Tewksbury (1997) suggest.

As a preliminary analysis for hypothesis building, the present study examines the tone of the news coverage between the pre-air war stage and the beginning of the air war. The present study draws evening news transcripts of three broadcasting networks between January 4th and January 18th from Althaus's (2000) study and aggregates them into pro-force/con-force and pro-/ con-war categories. All statements advocating the use of military force against Iraq were coded as pro-force news themes; all statements opposing the use of military action against Iraq were coded as con-force news themes. Then, the average daily number of pro-and con-force statements per network broadcast was measured. All news statements advocating for the Gulf War in general were coded as pro-war and all news statements opposing the Gulf War in general were coded as con-war.[4] The two trained coders' inter-coder agreement on specific themes was 88%.

Figure 2 and 3 are about here

Figure 2 shows the average number of pro-and con-force themes and Figure 3 shows pro- and con-war themes in a broader sense and total Gulf war themes including a neutral tone. Clearly, as the air war started, the tone of the news discourse suddenly shifted toward pro-force and pro-war. Thus, at the time of the air war the most recent and frequent news tone was pro-war. It is enough to argue that pro-war attitudes (i.e., favorable attitudes toward military action) would be accessible at the time of the air war. Based on Higgins' argument on accessibility effects, the present study predicts that a more favorable attitude toward military action would be associated with more approval of the Gulf War and approval of the president's overall job performance. Indeed, these associations would be stronger after the start of the air war, since favorable attitudes toward military action is congruent with the primed concept.

However, it is not so clear whether the present study will observe the same hydraulic patterns as previous studies observed in the case of related-unrelated attitudes, even in the case of related, applicable, but conflicting attitudes. If the same kind of the unanimously dominant hydraulic pattern would be observed, favorability toward a diplomatic solution should not be charged, thus the study should expect no significant associations between attitude toward a diplomatic solution and approval of the war or approval of the president. Or, at the least, associations between attitude toward a diplomatic solution and approval of the war and the president should be reduced after the air war, since con-force and con-war themes became less frequent as the air war began. However, if the priming effect is not a simple function of the frequency and recency of a prime, the present study would not observe the same hydraulic patterns that previous studies have found. Given that con-force and con-war themes are also accessible (even though they are less accessible than pro-war themes) and applicable in the dynamic news environment as shown in Figure 2 and 3, the study could argue that an attitude toward a diplomatic solution would be strong enough to "reset" the priming effect. Especially considering that pro and con themes had been in tight competition with each other between the pre-and the post-war phases (see Figure 2 and 3), the study would not observe the unanimous and unidirectional priming effects assimilated to the air war. Given this, the present study should observe the use of attitudes toward a diplomatic solution in contrast to attitudes toward military action (i.e., the air war), which is the so-called resetting effect that Martin (Martin, 1986; Martin & Achee, 1992, Martin, Seta, & Crelia, 1990) suggests.

Additionally, the present study will also examine whether the patterns of the priming effects are intensified or attenuated by news exposure. The present study assumes that priming effects are not persuasion effects envisioned in the traditional dosage-resistance perspective. Rather, priming effects are driven from the resonance of news information environments with people's existing attitude structures. Individuals who are only minimally exposed to the news media might perceive only a big message (pro-force or pro-war), whereas individuals who are highly exposed to the news media might perceive the dynamics of the news information environment (see Krosnick & Brannon, 1993). As a result, if there is a resetting effect of priming, the present study expects resetting or dissociation effects of priming would be intensified among people who are relatively more exposed to the news media.

Method

Data

The present study employed a set of panel data from the *CBS/New York Times* Persian Gulf War Polls (Part 3). Originally, 1,348 people were surveyed via telephone between January 5th and 7th (time 1). On January 17th, when the air war started, 530 of them were reinterviewed (time 2).[5] The present study uses this 530 respondent sub-sample to examine potential changes in attitude structures and their strengths after the war.[6]

Measures

Overall evaluation. Approval of the president's overall job performance was measured by the question, "Do you approve or disapprove of the way George Bush is handling his job as President?" Wording of the pre-and the post questions was the same. It was coded as a dummy variable (Approve = 1, Disapprove = 0, Don't Know/Not Answered = missing).

Evaluation of the president's handling of the Gulf War. Gulf War performance was measured by the question, "Do you approve or disapprove of the way George Bush is handling Iraq's invasion of Kuwait?" The wording of the pre-and the post questions was the same. It was coded as a dummy variable (Approve = 1, Disapprove = 0, DK/NA =missing).

Attitude toward military action. Attitude toward military action in the Gulf War was measured by the question," The United Nations has passed a resolution authorizing the use of military force against Iraq if they do not withdraw their troops from Kuwait by January 15. If Iraq does not withdraw from Kuwait by then, do you think the United States should start military action against Iraq, or should the United States wait longer to see if the trade embargo and other economic sanctions work?" (time 1, pre-war), and "Do you think the United States did the right thing in starting military action against Iraq, or should the United States have waited longer to see if the trade embargo and other economic sanctions worked?" (time 2, post-war). Wording of the pre-and the post questions were different because each of them was carried out before the air war and after the air war, respectively. Answers were coded as a dummy variable (Start action (pre)/Right thing (post) = 1, Wait to see = 0, DK/NA =missing).

Attitude toward diplomatic solution. Attitude toward diplomatic solution was measured by the questions, "In dealing with the Middle East, do you think the Bush administration has tried hard enough to reach diplomatic solutions, or has it been too quick to get American military forces involved?"(pre), and "In dealing with the Middle East, do you think the Bush administration has tried hard enough to reach diplomatic solutions, or has it been too quick to get American military forces involved?" (post) (Too quick to get military involved = 1, Tried hard enough = 0, DK/NA =missing).

Party identification. Party identification was controlled in every step of the path analysis. Party identification was recoded into dummy variables for Republicans and Democrats, taking independent as a reference category.

News exposure. News exposure was measured by the survey question, "How closely are you following news about the situation in the Persian Gulf? Would you say you are following it very closely (1), fairly closely (2), not too closely (3), or not at all closely (4)?" 47.7% of the respondents reported "very closely" in the pre-war survey while 76.6% of respondents said "very closely" in the post-war survey. In the analysis, the present study divided respondents into two groups by the degree of news exposure in the post war survey considering their median score (median=1, very closely, High exposure group = following it very closely, Low exposure = others), and examined coefficients of the path analysis by groups.

Results

Table 1 provides the trends of support for President Bush and his performance. After the air war began on January 16th 1991, public opinion became more favorable toward Present Bush and his administration. The proportion of people who thought military action was the right thing increased from 51.3% between January 5th and 7th to 82.9% on January 17th1991. The percentage of people who thought that the diplomatic solution was not harsh enough decreased from 42.2% to 18.7%. Approval of Bush's handling of the Gulf War also increased from 65% to 89.3%. Overall, approval of the president's general job performance increased from 72% between January 5thand 7th to 89.6% on January 17th 1991.

Table 1 is about here

To test priming effects, the present study analyzed the path model twice, once with the pre-and another with post-air war samples.[7] The results are shown in Figure 4a and Figure 4b.

Figure 4a, 4b are about here

Attitude toward military action had an impact on approval of the president's overall job performance regarding approval of his handling of the Gulf War. Yet, the anticipated direct impact of military action on overall job performance was not observed. On the other hand, attitude toward a diplomatic solution functioned not only as a ground for the approval of handling of the Gulf War but also for approval of his overall job performance. The patterns in the pre-and the post air war samples were identical.

Given that the tone of news coverage turned out to be more favorable toward military action, the present study predicted that both of the paths from military action to attitude toward the handling of the Gulf War and from the attitude toward handling of the Gulf War to the overall attitude would be stronger in the post than in the pre-air war data. As predicted, those two coefficients were significantly increased (see Table 2).

Table 2 is about here

Unlike the hydraulic pattern predicted in previous research, the impact of attitude toward a diplomatic solution on overall attitude was also stronger in the post-war model than the pre-war model, implying a resetting effect. This means that while coverage of military action primed approval of the Gulf War and general presidential performance, attitudes toward a diplomatic solution strongly suppressed the approval of the Gulf War and of the president's overall job performance. Rather than assimilate all constructs to the contextual prime of the air war (i.e., pro-war), people also used the diplomatic solution as a criterion in evaluating the president's handling of the war and his overall job performance. Furthermore, the differences between the pre-and the post–war coefficients for this variable were larger than that of attitude toward military action. All changes in coefficients were statistically significant at a conventional level ($p < .05$).[8] This is clearly not a hydraulic pattern of a priming effect. The total impact of attitude toward a diplomatic solution (see Table 2) on overall attitude toward the President, thus, was greater than that of attitude toward military action.

Table 3 is about here

Table 3 presents the pre and post differences separated by news exposure level. As expected, the pattern of a resetting effect was more intensified and clearly observed among people who were highly exposed to the news media (above the median) than those who were not. Whereas the impacts of the attitude toward a diplomatic solution were boosted and the impacts of attitude toward military action tended to be attenuated in the high news exposure group, this pattern was not clearly observed in the low news exposure group. Rather, a hydraulic pattern seemed to be observed in the low news exposure group, not in the high exposure group.

Discussion

The present study suggests an attitude structure model of priming as a different approach to assessing priming effects. While previous studies on the priming effect have focused on hydraulic patterns in the change of weights among relevant and irrelevant sub-dimensional attitudes in a congruent category match paradigm, this study took a multi-attitude approach based on an associative network model rather than on a single attitude. Through this approach, the present study tried to overcome the limitations of previous studies that have neglected potential association/dissociation or set/reset effects of priming, have presumed the simple accessibility and applicability of the big message, and have limited the research within the scope of a long-term effect. The present study tried to understand priming effects beyond simple accessibility of a congruent prime by highlighting Martin's (1986) setting/resetting effects in the dynamics and complexities of the news media environment.

The present study found some interesting and important results. First, this study identified sub-domains of attitude structures, which are relevant to the operation of Gulf War news media priming. Based on a content analysis of news coverage, this study confirmed that the attitude structure of the Gulf War resonated with the major themes of news coverage, military action (i.e., pro-war) and diplomatic solution (i.e., con-war). In this complex and dynamic information environment, where two major ideas of the Gulf War were competing with each other, people also had two conflicting attitudes as their foundation for a more general attitude toward the Gulf War and the president's job performance.

This study found that there was a direct association between attitudes toward a diplomatic solution and evaluations of the president's overall job performance, whereas there was no significant corresponding direct impact of attitudes toward military action on evaluations of the president's overall job performance. Anderson (1983) argues that the strength of associations largely lies in their inherent strength. Given this, the direct effect of attitudes toward a diplomatic solution on evaluations of the president's overall job performance may indicate that the association between these two domains of the attitude structure is inherently strong. On the other hand, the finding of no direct influence of military action on job approval may suggest that Mueller's (1970,1973) simple causal notion of a rally around a flag effect might not always apply. Further refined replications are needed to test these suggestions.

The present study clearly showed that priming effects did exist even in short term contexts outside laboratories. All of the impacts of existing attitudes presented here were stronger shortly after the air war. This confirmed Price and Tewksbury's (1997) notion of the temporary accessibility of priming effects. Given that previous studies have found long-term priming effects, this finding of short-term priming effects may enlarge the scope of priming research.

Most importantly, the present study discovered that attitudes toward a diplomatic solution *did* have a strong impact on attitudes toward the president's handling of the Gulf War and the overall evaluation of the president after the air war, which implies the presence of a resetting effect of priming. Furthermore, the repressing effect was even *stronger* than the priming effect of attitudes toward military action in terms of its absolute value. Even in the face of the air war, which is the strong pro-war contextual prime disseminated by the news media, attitudes toward a diplomatic solution were still, and even more strongly, used in conjunction with attitudes toward military action in making judgments of the president. The resetting effect was more clearly observed among people who were heavily exposed to the news media than among those who were not. This pattern of a resetting effect has not been revealed prior to the present study because previous studies have not differentiated between the sub-domains of attitude structures.

The present findings confirm, first of all, that hydraulic patterns of priming effects, at the least, are not guaranteed to occur. Even though news media coverage was primarily geared toward favoring military action, a prime-independent attitude—considerations about a diplomatic solution-- was also used as a criterion of approval for the president's war and overall job performance. As Martin (1986; Martin & Achee, 1992; Martin, Seta, & Crelia, 1990) suggests, this can be regarded as a resetting effect. Given that the attitude of a diplomatic solution was strong enough at the pre-air war phase in people's attitude structure, this finding makes sense. Reassessing priming effects with conflicting ideas or attitudes has the advantage of revealing a resetting effect, which extends the scope of priming effects beyond a hydraulic pattern.

Also, the results indicate that priming effects might not unanimously occur. Previous studies have focused too much on passive priming effects in terms of accessibility effects as a simple function of the frequency and recency of primes at the time of stimulus. However, the present study may suggest that people might use/disuse or set/reset the concepts suggested by news primes or associate/dissociate the primes with their subsequent judgments. These active priming effects should also be examined in future research. This might be the place where people's motivations can play a role in priming effects.

However, the use of attitudes toward a diplomatic solution does not necessarily limit the news media effects here. As shown in the news content analysis, pro-and con-war themes had been at odds during the given time period, although the pro-war theme was more frequent. As Martin and Achee (1992) argued, two-sided presentation of news might have played a role as a cue to use attitudes toward a diplomatic solution. Attitudes toward a diplomatic solution were also accessible and applicable in a cumulative manner, although at the point of the air war, the pro-war theme was more prominent. In this sense, it might be possible to argue that news media also influenced the use of attitudes toward a diplomatic solution in subsequent judgments. This implies, at the least, that the notion of the big message effect in previous studies has limitations in explaining the subtle nuances of some news media effects.

The present study has some limitations in fully explicating and generalizing new findings. As major prior studies of priming effects used the Gulf War as a case, this study employed the case of the Gulf War as well. However, the results obtained here might not be easily generalized to other issue domains. The present study suggests that more refined replication of this approach in other cases will clarify our understanding of the priming effects of the news media.

Notes

1. Whether elite discourse was really in consensus needs to be reconsidered. At the least, news discourse on administration actions seems to question this idea. A relevant content analysis will be provided later in this study, although that is limited to the time period this study employed.
2. This is one of the differences between a priming effect and a persuasion effect. While a persuasion effect emphasizes attitude formation by a persuasive message, a priming effect focuses on changes in the grounds of an attitude, even if there is no net change in the attitude. That is to say, media alters the foundations of individuals' support for the President (i.e., the gradient hypothesis; Miller & Krosnick, 1996; Krosnick & Kinder, 1990) rather than forms their support or shifts their attitudes from non-support (not support or neutral) to support. Still, the relationship between a persuasion effect and a priming effect---whether they are independent phenomena or not-- is not clear. In the case of the Gulf War, this puzzle is more evident. As priming studies have argued, mass media altered the criteria for overall evaluations of Bush's job performance; but at the same time a net attitude change also occurred as the media focused heavily on the War. Unless a new way to tap this question is developed, the competing but not conflicting two explanations (i.e., priming and persuasion) and their relationship remains a tangled issue in political communication.
3. Zaller (1992) admits that his axiom (A3) of accessibility effect has a limitation, because he did not address "what exactly it is that determines when ideas are related or similar" (Zaller, 1992, p. 277). He subsequently justified it, however, saying that the related idea is a function of logic or linguistic similarity, thus that it is less important than elite cues or the external information environment. Yet, I would rather argue that the association effect is more than simple connotative similarity as Martin's set/reset model suggests.
4. Based on the author's suggestion, pro-war themes included pro-force, pro-policy goals and justifications, and pro-war framing discourse in Althaus' (2000) original study. The opposite versions of these themes were counted as con-war themes. Three other sets of framing themes—war likely, delay, and patience—were counted as neutral.
5. The director of the CBS/New York Times polling center confirmed that interviewing for these polls typically began between 6:00 and 6:30pm Eastern time, with interviews staggered in such a way as to start in each time zone at about 6:00pm local time, continuing until about 10:00pm local time. Thus, most of the interviews were conducted either during or within a few hours after the evening news was broadcast on the day respondents were interviewed.
6. This short time lag between time 1 and time 2 has both some advantages and disadvantages. The time lag might be too short to examine the construction and the stability of the attitude structure, especially because the post-war panel was carried out immediately after the air war began. It might have been too early for the public to form attitudes regarding the war. In spite of this disadvantage, this quasi-experimental approach would be better than a study using a long time period lag in causal inferences, since the possibility of the confounding effect would be reduced. Moreover, given that a priming effect may be a temporary

accessibility effect (Price & Tewksbury, 1997), a short lag would theoretically be a better way to assess priming effects.

7. To test the goodness of the fit of the model, the present study pooled the pre and post air war data and test the attitude structure model of priming. The model (including party ID as exogenous variables) test confirmed that the model is statistically robust with the chi-squares=34.52 (df=8) and the AGIF =.955.
8. Since all dependent variables are dichotomous, Wald test was used to test whether coefficient changes were statistically significant (Long, 1997).

References

Althaus, S. L. (September, 2000). Presidential communication strategies and evening news coverage of the Gulf Crisis: A preliminary report. Paper presented at annual meeting of the American Political Science Association, Washington, DC.

Anderson, J. R. (1983). *The architecture of cognition*. Cambridge, MA: Havard University Press.

Brody, R. A. (1991). *Assessing the president*. Stanford, CA: Stanford University.

CNN/New York Times Persian Gulf War Polls. (1990-1991). CNN & New York Times.

Higgins, E. T. (1989). Knowledge accessibility and activation: Subjectivity and suffering from unconscious sources. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp75-123). New York: Guilford Press.

Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp.133-168). New York: Guilford.

Higgins, E. T., Bargh, J. A., & Lombardi, W. (1985). Nature of priming effects on categorization. *Journal of Experimental Psychology, 11*, 59-69.

Higgins, E. T., & King, G. (1981). Accessibility of social constructs: Information-processing consequences of individual and contextual variability. In N. Cantor & J. Kihlstrom (Eds.), *Personality, cognition, and social interaction*. Hillsdale, NJ: Erbaum.

Iyengar, S., & Kinder, D. R. (1987). *News that matters: Television and American opinion*. Chicago: University of Chicago Press.

Iyengar, S., & Simon, A. (1997). News coverage of the Gulf Crisis and public opinion. In S. Iyengar & R. Reeves (Eds.), *Do the media govern? Politicians, voters, and reporters in America* (pp.248-275). Thousand Oaks, CA: Sage.

Krosnick, J. A., & Brannon, L. A. (1993). The impact of the Gulf War on the ingredients of presidential evaluations: Multidimensional effects of political involvement. *American Political Science Review, 87*, 963-975.

Krosnick, J. A., & Kinder, D. R. (1990). Altering the foundation of support for the president through priming. *American Political Science Review, 84*, 497-512.

Lombardi, W. J., Higgins, E. T., & Bargh, J. A. (1987). The role of consciousness in priming effects on categorization: Assimilation versus contrast as a function of awareness of the priming task. *Personality and Social Psychology Bulletin, 13*, 411-429.

Long, S. (1997). *Regression models for categorical and limited dependent variables*. Thousand Oaks, CA: Sage.

Martin, L. L. (1986). Set/Reset: Use and disuse of concepts in impression formation. *Journal of Personality and Social Psychology, 51*, 493-504.

Martin, L. L., & Achee, J. W. (1992). Beyond accessibility: The role of processing objectives in judgment. In L. L. Martin & A. Tesser (Eds.), *The construction of social judgments* (pp. 195-216). Hillsdale, NJ: Erlbaum.

Martin, L. L., Seta, J. J., & Crelia, R.A. (1990). Assimilation and contrast as a function of people's willingness and ability to expend effort in forming an impression. *Journal of Personality and Social Psychology, 59*, 27-37.

Miller, J. M., & Krosnick, J. A. (1996). News media impact on the ingredients of presidential evaluations: A program of research on the priming hypothesis. In D.C. Mutz, P. M. Sniderman, & R. A. Brody (Eds.), *Political persuasion and attitude change* (pp. 79-99). Ann Arbor: University of Michigan Press.

Miller, J. M., & Krosnick, J. A. (2000). News media impact on the ingredients of presidential evaluations: Politically knowledgeable citizens are guided by a trusted source. *American Journal of Political Science, 44*, 295-309.

Mueller, J. E. (1970). Presidential popularity from Truman to Johnson. *American Political Science Review, 64*, 18-34.

Mueller, J. E. (1973). *War, presidents, and public opinion*. New York: Wiley.

Mueller, J. E. (1994). *Policy and opinion in the Gulf War*. Chicago: University of Chicago Press.

Oneal, J. R., & Brayn, A. L. (September, 1993). The rally round the flag effect in U. S. foreign policy crisis, 1950-1985. Paper presented at the annual meeting of the American Political Science Association.

Pan, Z., & Kosicki, G. M. (1997). Priming and media impact on the evaluation of the president's performance. *Communication Research, 24*, 3-30.

Price, V., & Tewksbury, D. (1997). News values and public opinion: A theoretical account of media priming and framing. In G. Barnett & F. Boster (Eds.), *Progress in communication science (Vol. 13)* (pp. 173-212). London: Ablex Publishing.

Strack, F., Martin, L. L., & Schwarz, N. (1988). Priming and communication: Social determinants of information use in judgments of life satisfaction. *European Journal of Social Psychology, 18*, 429-442.

Wyer, R. S. Jr., & Srull, T. K. (1986). Human cognition in its social context. *Psychological Review, 93*, 322-359.

Zaller, J. (1992). *The nature and origins of mass opinion*. New York: Cambridge University.

Zaller, J., & Feldman, S. (1992). A simple theory of the survey response: Answering questions versus revealing preferences, *American Journal of Political Science, 36*, 579-616.

Figure 1. A model of attitude structure of priming: The case of the Gulf War

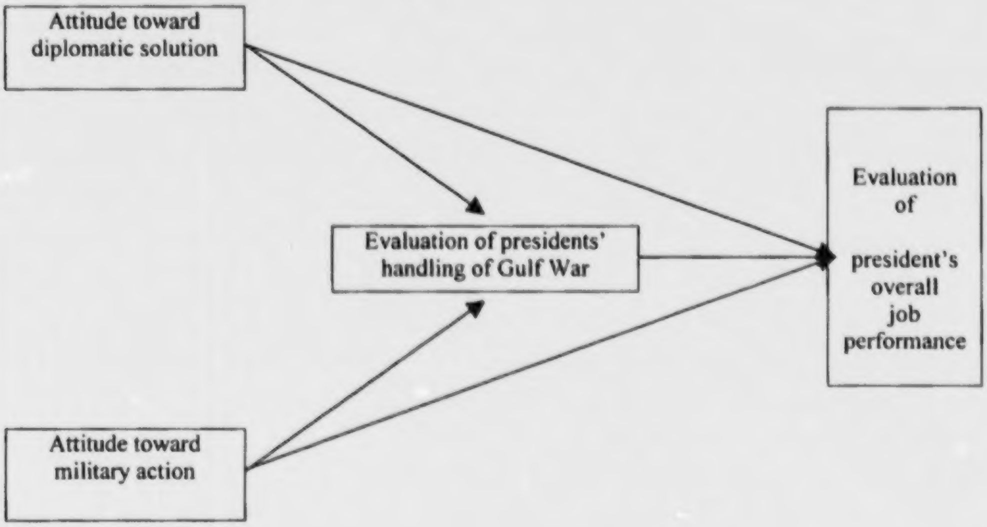

Attitude toward diplomatic solution
Evaluation of presidents' handling of Gulf War
Evaluation of president's overall job performance
Attitude toward military action

Figure 2. Force themes in the broadcast network news

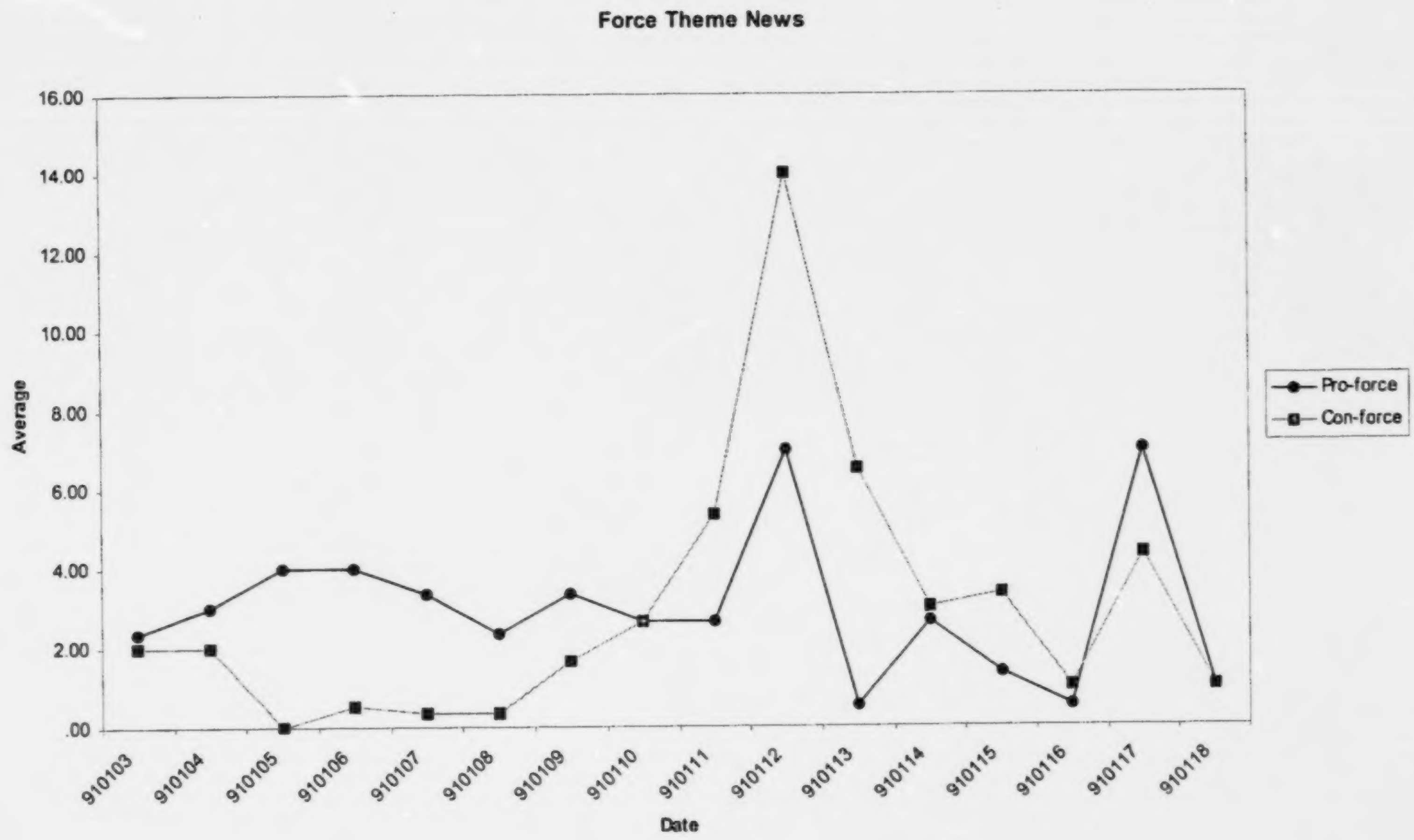


Figure 3. Gulf War news in the broadcast network news

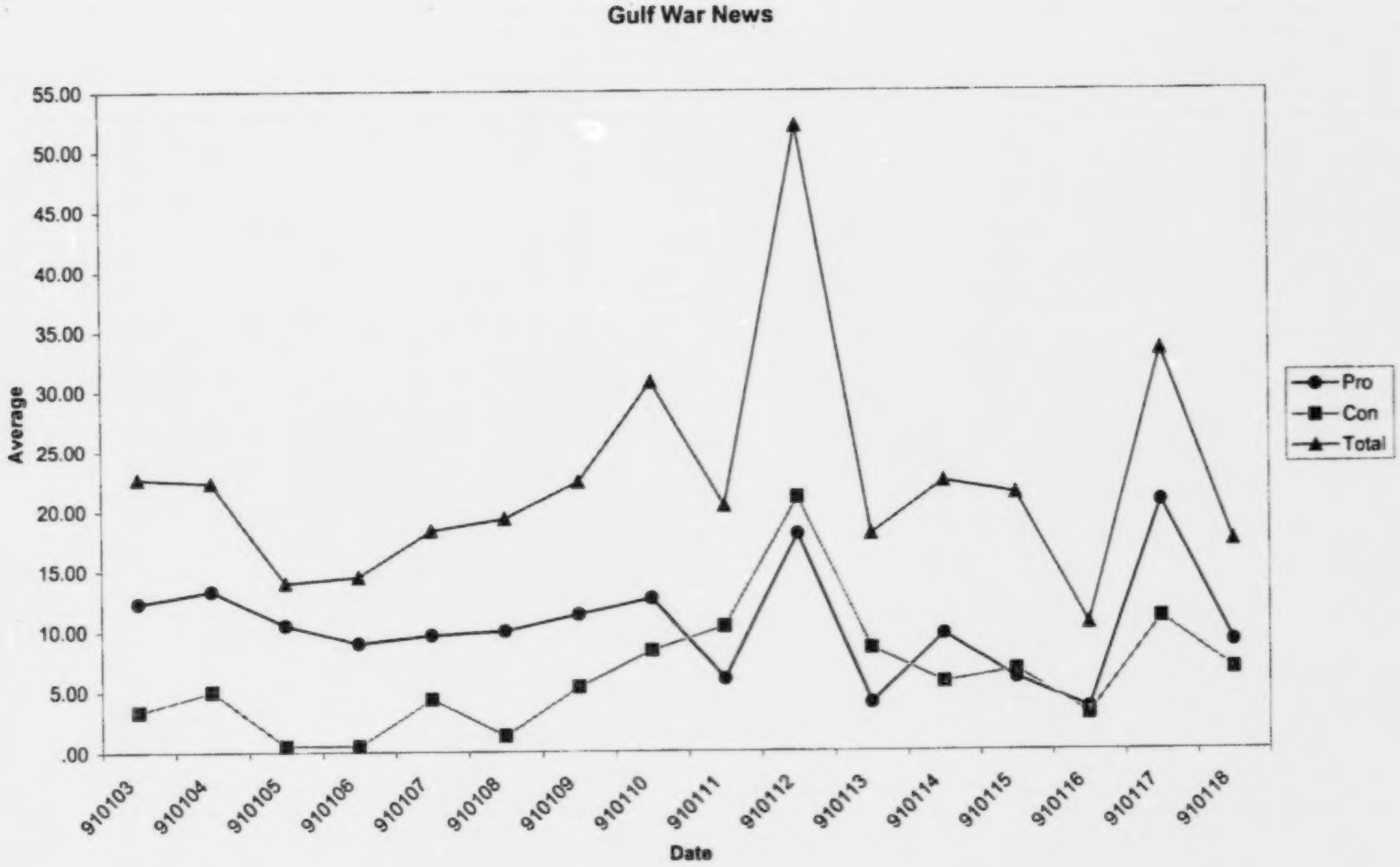


Table 1. Percentage of approval of each domain

	Pre-war		Post-war	
	Approve	Disapprove	Approve	Disapprove
Attitude toward military action	51.3	48.7	82.9	17.1
Attitude toward diplomatic solution	42.2	57.8	18.7	81.3
Evaluation of president's handling of Gulf War	65.0	35.0	89.3	10.7
Evaluation of president's overall job performance	72.0	28.0	89.6	10.4

N = 530
Entries are percentages.
Don't Know's were treated as missing.

Table 2. Priming Effects: Pre-Post War Comparison

	Pre-War	Post-War	Difference
Dependent variable: Evaluation of president's handling of Gulf War			
Attitude toward military action	.666	1.259	.593
Attitude toward a diplomatic solution	-2.225	-2.671	.446
Dependent variable: Evaluation of president's overall job performance			
Attitude toward military action	n.s.	n.s.	-
Attitude toward a diplomatic solution	-.703	-2.549	1.846
Evaluation of president's handling of Gulf War	3.158	3.999	.841
Total effects			
Attitude toward military action	2.103	5.034	2.931
Attitude toward a diplomatic solution	-7.729	-13.230	5.501
Evaluation of the Gulf War	3.158	3.999	.841

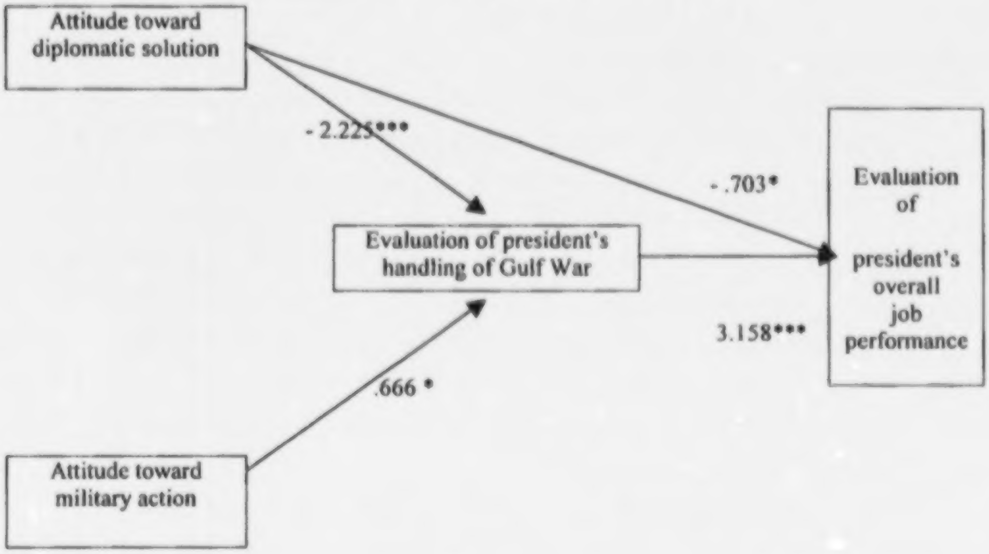
Note. N= 530
Entries are coefficients
Differences are absolute values to indicate directional effects.
All differences are significant at $p < .05$
n.s.' indicate coefficients statistically non-significant at $p < .05$

Table 3. Priming Effects by News Exposure

	High News Exposure (n = 405)			Low News Exposure (n = 124)		
	Pre-War	Post-War	Difference	Pre-War	Post-War	Difference
Dependent variable: Evaluation of president's handling of Gulf War						
Attitude toward military action	.866	n.s.	(-).866	n.s.	2.644	2.644
Attitude toward a diplomatic solution	-2.149	-3.994	1.845	-3.210	n.s.	(-)3.210
Dependent variable: Evaluation of president's overall job performance						
Attitude toward military action	-1.162	n.s.	1.162	2.589	n.s.	(-)2.589
Attitude toward a diplomatic solution	-.926	-2.223	1.297	n.s.	-2.481	2.481
Evaluation of the Gulf War	3.631	3.294	(-).337	3.771	5.356	1.585
Total effects						
Attitude toward military action	1.982	0	(-)1.982	2.589	14.161	11.572
Attitude toward a diplomatic solution	-8.729	-15.379	6.650	-12.104	-2.481	(-)9.623
Evaluation of the Gulf War	3.631	3.294	(-).337	3.771	5.356	1.585

Note. Entries are coefficients
Differences are absolute valute
(-)s indicate the reduction of impacts
All differences are significant at p < .05
n.s.' indicate coefficients statistically non-significant at p < .05
n.s. coefficients are regarded as 0 when the pre-and post war differences are calculated.

Figure 4a. Path Analysis of attitude structure of Priming: Pre-War


Attitude toward diplomatic solution
- 2.225***
- .703*
Evaluation of president's overall job performance
Evaluation of president's handling of Gulf War
3.158***
.666 *
Attitude toward military action

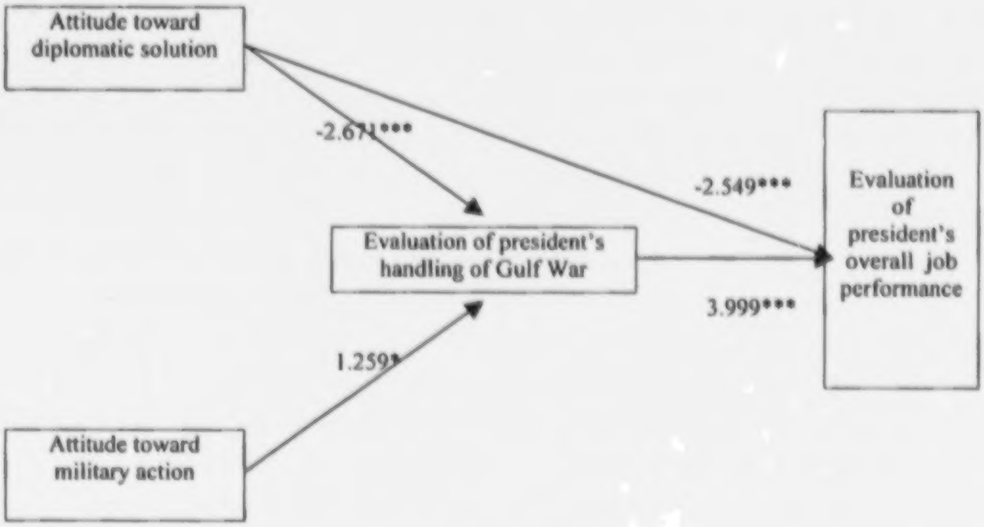
N= 530

Entries are coefficients of logistic regression

Attitude toward military action was excluded at the second level, since it was not significant (p>.10)

All coefficients are significant at * p < .05 ** p < .01 ***p < .001

Figure 4b: Path Analysis of attitude structure of Priming: Post-War


Attitude toward diplomatic solution
-2.671***
-2.549***
Evaluation of president's handling of Gulf War
Evaluation of president's overall job performance
3.999***
1.259*
Attitude toward military action

N = 530
Entries are coefficients of logistic regression
Attitude toward military action was excluded at the second level, since it was not significant (p>.10)
All coefficients are significant at * p< .05 ** p < .01 *** p < .001

CT+M

Reframing Frame Analysis: Gaps and Opportunities in Framing Research

By Sonora Jha-Nambiar

Doctoral Student,
Manship School of Mass Communication,
Louisiana State University.

Address: 4155 Essen Lane, #138,
Baton Rouge, LA 70809.
Tel: 225-578-2002 (Work)
225-9243148 (Home)
225-252-6779 (Cell)
email: snambi1@lsu.edu; sonorajha@hotmail.com

Abstract: This paper examines how research into framing in the media remains largely one-sided by attributing the construction of the frame to the media. Current research views the audience merely through the lens of media effects and audience interpretation, thus limiting the growth of this valuable theory. By re-exploring Erving Goffman's work and how it relates to the narrative element of stories and schema theory, this essay suggests links that would broaden the theoretical understanding of framing.

---- Sonora Jha-Nambiar

In his 1977 classic, Erving Goffman[1] examined the process of framing as a circuitous one, in which both reporters and readers are actors in the production of the framed story:

> Our understanding of the world precedes these stories determining which ones reporters will select and how the ones that are selected will be told. . . . The design of these reported events is fully responsive to our demands – which are not for facts but for typifications. Their telling demonstrates the power of our conventional understandings to cope with the bizarre potentials of social life, the furthest reaches of social experience. What appears, then, to be a threat to our way of making sense of the world, turns out to be an ingeniously selected defence of it. We press these stories to the wind; they keep the world from unsettling us.[2]

Frame analysis in mass communication has since travelled away from Goffman's inclusive approach and made forays into to the narrower areas of, chiefly, frame selection in the media and frame reception by media audiences. This growing specialization within a theory that had multiple avenues of evolution has limited our understanding of at least one key aspect of framing – the epistemology of framing in the media. While scholarship often touches upon the need for analysing why, how and where journalists adopt their frames, very little such research is actually done. This paper seeks to draw attention to one key area that such research could enrich – the determination of the act of framing and actual frames by the narrative imperative of news-reporting. This view is informed by the understanding of framing and related theories and models across disciplines that seem to indicate that framing and frames are determined by the rules and traditions of story-telling.

Thus, this paper seeks to analyse the commonalities between frame choice and construction by the media on the one hand and the story-seeking schema by the readers/audiences on the other.

For his analysis, Goffman used anecdotes cited from the press and biographical books in the popular genre. The use of these merits analysis for how it informs our understanding of news as narrative discourse and because there is much in common in the way both of Goffman's selected textual forms order our organization of experience:

> Consider now dramatic scriptings. Include all strips of depicted personal experience made available for vicarious participation to an audience or readership, especially the standard productions offered commercially to the public through the medium of television, radio, newspapers, magazines, books, and the legitimate (live) stage. This corpus of transcriptions is of special interest, not merely because of its social importance in our recreational life, or, as already suggested, because of the availability of so much explicit analysis of these materials, or because the materials themselves are easily accessible for purposes of close study; their deepest significance is that they provide a mock-up of everyday life, a put-together script of unscripted social doings, and thus are a source of broad hints concerning the structure of this domain.[3]

News and Narratives

Journalists believe themselves to be story-tellers. Many of them come to the profession inspired by their urge to ' 'write.'' Even those reporters who cover daily politics see their subjects as characters and their text as the unfolding of a story. In the words of one such reporter: ''It is easier and faster to build a coherent story with a small cast of characters. The House of Representatives is too much like *War and Peace*; the Senate is more on the scale of *Crime and Punishment*.''[4]

In his examination of the sociology of news-writing, for instance, Darnton[6] found that a strong element in shaping the news is the existence of ''cultural determinants.'' Cultural cues, he says, remain the same from the time of *Mother Goose*. Many years after his research as a participant-observer in a pressroom at a police headquarters in Newark, while researching popular culture in early modern France and England, Darnton came across tales that bore a common motif - English chapbooks, broadside ballads, and penny dreadfuls, French canards, images d'Epinal, and the bibliotheque bleue, as well as children's literature. He found that these ''bore a striking resemblance'' to the news stories he had written as a Newark reporter.

> In their original version, nursery rhymes were often intended for adults. When journalists began to address their stories to a 'popular' audience, they wrote as if they were communicating with children. . . . Thus the condescending, sentimental and moralistic character of popular journalism. It would be misleading, however, to conceive of cultural diffusion exclusively as a 'trickle-down' process, for currents move up from the common people as well as down from the elite. The Tales of Perrault, *The Magic Flute* by Mozart, and Courbet's *Burial at Omans*, illustrate the dialectical play between 'high' and 'low' culture in three genres during three centuries. Of course we did not suspect that cultural determinants were shaping the way we wrote about crimes in Newark, but we did not sit down at our typewriters with our mind a *tabula rasa*. Because of our tendency to see events rather than long-term processes, we were blind to the archaic element in journalism. But our very conception of 'news' resulted from ancient ways of telling 'stories.'

This symbiosis of structuring stories raises the argument that frames have already been constructed and are merely assembled by the time it comes to the presentation of news. Eight decades ago, Walter Lippmann[6] understood the process of newspaper reporting to be the filling out of an established ''repertory of stereotypes'' with current news. Another classic study of news practices in 1973 by Epstein[7] involving interviews with journalists confirmed the existence of established ''storylines.'' Epstein quotes an NBC commentator on the ''limited number of plots'' in network news - ''Black versus White,'' ''War is hell,'' ''America is falling apart,'' ''Man against the elements,'' ''the Generation Gap,'' etc. A comparison of these plots with media frames would establish the symbiotic relationship between narrative and frame. For instance, an analysis of framing in news discourse has arrived at four dominant structures: syntactical, script, thematic and rhetorical.[8] Gamson and Modigliani measured framing ''devices'' - metaphors, exemplars, catchphrases, depictions and visual images.[9] All these owe their origin to narrative texts. Gaye Tuchman, in her examination of news as frame, pointed out that her approach to news classifies it with other stories and assumes that stories are the product of cultural resources and active negotiations. The commonalities between the fairy tale and news, she points out, is that both are stories, ''to be passed on, commented upon. . . . Both draw on the culture for their derivation. . . . Jack Kennedy and Jack of beanstalk fame are both cultural myths, although one lived and the other did not.''[10]

Altheide and Michalowski[11] cite Iyengar's[12] conception of journalists using frames to tell a ''story'' that the audience can ''recognize,'' ''that they have probably heard before,'' and moreover, to get specific information from sources that can be tied to this.

News, Frames and Schemas

Contrary to what Epstein's title suggests, journalists do not produce ''news from nowhere.'' Examining aspects of schema theory that emerge from social and cognitive psychology, Mandler[13] has pointed out that schemas are often described as sets of expectations. People form a schema for stories. ''A story schema is a mental structure consisting of sets of expectations about the way in which stories proceed.' '[14] Examining the case of traditional stories, which exist across cultures, Mandler says that traditional stories are full of regularities. From an early age people develop expectations about the overall form of traditional stories; they learn that these stories involve protagonists who have goals and who engage in attempts to achieve those goals, and that goals and events cause other goals and events in predictable ways. When we relate these to news stories, research into the correspondence of these elements with the five W's and one H of a news story may provide interesting results.

The schema is used to form an organized representation of the content of the story. Getting deeper into examining the psychological validity of a story schema through experiments in recall, researchers have consistently found that stories having all the prescribed elements in their correct sequence had resulted in better recall than stories that had their sequence and elements scrambled up, even when toddlers were doing the unscrambling. Furthermore, participants are more likely to recall the central material (or the gist) from story constituents than elaborations on these units.[15]

Mandler also points out that one aspect of the schematic processing of knowledge by people is that atypical events are usually better recognized - and under some circumstances better recalled -- than typical ones. Some of the above observations seem to play out in the way news stories are framed in either episodic or thematic frames.[16] Research ought therefore to also stress on the role schemas play in shaping the structure of news apart from examining the reception, interpretation and understanding of news, which is the end at which current work in applying schema theory to mass communication is located.[17] Such research draws upon the fact that schema theory posits that people are guided in their perceptions by their cognitive structures - referred to as schemas. They use schemas to *construct* meaning out of the multitude of stimuli and messages they receive. Schemas help people to classify incoming information and messages, a lot of it through previous experience and expectations -- there are anticipatory schema composed of the individual's own life histories, social interactions, and psychological predispositions to the process of constructing meaning.[18]

However, what is most significant in the interplay between schemas and frames is evident from Mandler's understanding of the public's role in experiencing the world. ' 'It has been shown over and over again that people either discover structure inherent in the world or impose structure upon it.' '[19] There has been little direct inquiry, however, into the question that necessarily flows from the above research: *in imposing structure upon the world, what are the schemas that the public imposes on news texts?* This particular gap in research can be attributed to the tendency of political scientists, sociologists and mass communication researchers to focus on priming and accessibility effects of news framing by journalists onto their receiving public.[20] As Fiske and Taylor point out, a common feature of these otherwise diverse analyses is a portrait of the individual as a limited-capacity information-processor.[21] Framing the framing debate in normative controversies and effects research has tended to prevent inquiry from progressing into analyses of the roots of framing, which could then shed light on ways that could allow media practitioners to work outside the frame.

It becomes important to point out here that the argument presented in this paper is neither a defence of the media nor a denial of the effects of media framing on message reception. The much-cited Kahneman and Tversky[22] experiments have provided a riveting example of readers' different perceptions of the same problem framed differently. However, it might be a mistake to extrapolate these immediate interactions to a larger public opinion argument without a deeper understanding of the origins or simultaneous manufacture and assembly of frames. In other words, even scholars who do not feel comfortable with the magic bullet conceptions of media effects themselves move merely one step forward by examining the simultaneity and multiplicity of encoding-decoding processes or dissemination-reception processes.

Social constructivism, for instance, places the weight of the origin of the communication loop on the mass media, with readers and viewers merely processing and interpreting the received message according to their pre-existing meaning structures and schemas.[23] Audience frames and individual frames, too, have been laid out by these scholars within the grid of processing and cognitive devices. Stephen Reese[24] points out that the acceptance and sharing of a media frame depends on what understandings the reader brings to the texts to produce negotiated meaning. This paper, however, advances the idea that a more fundamental question to ask would be : What understandings does the reader *expect* from the texts to produce negotiated meaning?

Some indications in this direction have been provided within other contexts. In examining public opinion on nuclear power, for instance, Gamson and Modigliani[25] believe that public opinion on issues can be understood by rooting it in an issue culture that is *reflected* (emphasis added) and shaped by general audience media. Describing the process of framing in journalists' minds and work, these authors say that while journalists may draw their ideas and language from any or all of the other forums, frequently paraphrasing or quoting their sources, they are involved in a parallel process of contributing their own frames, inventing their own clever catchphrases, drawing on a popular culture that they share with their audience. Gitlin[26] makes similar observations on the influences that act upon journalists as running parallel to those that journalists themselves exert. He points out that media frames, largely unspoken and unacknowledged, organize the world both for journalists who report it and, in some important degree, for us who rely on their reports. To provoke research into the ''priming'' of journalists, however, will require a deeper analysis of journalists as ''impressionable'' social actors rather than as proactive professionals.

If we extend the dramaturgical perspective advanced by Goffman, in which various actors are involved in performances in varied settings for different audiences in order to shape their definition of a situation, it becomes easier to imagine the journalist as not just an encoder but a decoder of frames. In other words, like the journalist and his/her story, all of us are using dramaturgical techniques -- framing, scripting, staging and performing -- to interact with others. This perspective has been applied and examined across disciplines. For instance, Gardner and Avolio present a model of how this is used between leaders and their followers.[27] If we use this perspective to review how politicians are framed and received by the media and audiences respectively, we might arrive at a better understanding of the media as not shaping but standing somewhere in between as the drama between politicians and the public plays out.

In the context of social movements, where considerable framing research has been concentrated, Gamson and Meyer point out that while frames are part of the world, passive and structured, people are active in constructing them. They say: ''Events are framed, but we frame events. The vulnerability of the framing process makes it a locus of potential struggle, not a leaden reality to which we all must inevitably yield.''[28] A similar understanding of news as a ''negotiated enterprise'' is provided by Tuchman, in her discussion of how the framing of news is similar to the framing of a simple conversation -- we select and exclude items on the basis of whether they are pertinent to both speaker and listener in order to be judged newsworthy.[29]

Frames, Schemata and Belief Systems

To explore further the notion of journalist as receiver of frames, we can examine the intersection of schemata, cultural resonance and belief systems. Snow and Benford refer to cultural resonances and the ''narrative fidelity'' of a frame whereby some frames ''resonate with cultural narrations, that is, with the stories, myths and folk tales that are part and parcel of one's cultural heritage.''[30] Anne Swidler suggests that culture can be thought of as ''a 'tool kit' of symbols, stories, rituals and worldviews, which people may use in varying configurations to solve different kinds of problems.[31]

This brings us to the notion of belief systems. Nelson and Kinder,[32] while examining the concept of frames as it relates to political cognition, state that visual images, icons, analogies, slogans and catchphrases all occupy important positions in a frame's architecture and there is no reason to believe that such elements are not also present within the individual's belief system. ' 'These symbols connect the issue with deeper values, principles, beliefs, and emotions that the individual may not even consciously recognize as directly relevant.' '[33]

Philip E. Converse[34] found that there are important distinctions between the belief systems of the educated elite and those of the mass public - the latter's political belief systems lack ideological coherence and make issue and policy demands that are fragmented, narrow and diverse. While the elite versus mass public distinction could lead us to the idea of media texts being dictated by the elite belief system, the way these texts are laid out -- particularly when viewed in the context of Iyengar's[35] argument of ' 'episodic versus thematic' ' framing - we would need to examine the possibility that media texts do, indeed, resemble the structure (or frames) of the belief systems of the mass public.

Moreover, while Converse's sociological perspective emphasized the role of the environment in structuring belief systems, various psychological viewpoints have stressed that internal mechanisms structure beliefs. Subsequent research using schematic models has shown that the environment influences schemas but then, these schemas, as internal structures, influence the way new information is organized and shape their own future development.[36]

Returning to the study of framing, schemas and belief systems within mass communication, we find that it branches off in varied directions despite occasionally converging at a point that is best explicated by Entman, who says that communicators make conscious or unconscious decisions in deciding what to say, guided by frames (often called schemata or schemas) that organize their belief systems.[37] Yet, Entman urges media scholars to adopt framing as a research paradigm in the areas of audience autonomy, journalistic objectivity, content analysis and public opinion and normative democratic theory. The central, primary area of studying journalists' belief systems (apart from the traditional ones of ''objectivity'' and ''news values'' that have been studied in the sociology of news-writing) has been largely ignored.

Reese comes close to addressing the need for such study when he provides the questions we may ask: ''whose principle was dominant in producing the observed coverage? How did the principles brought to bear by journalists interact with those promoted by their sources? These questions involve looking behind the scenes and making inferences from the symbolic patterns in news texts.''[38] Similarly, to seek to arrive at the kind of understanding that this paper believes frame analysis to be lacking in, we may employ (1)participant-observation studies of journalists in their social, rather than professional, milieu, (2) experimental research, focus group interviews and in-depth interviews into the story-writing processes that journalists employ in newsgathering and, especially, in newswriting, and (3) textual analyses that study the commonalities in patterns in news and other traditional and untraditional narrative texts.

Frames and Frame Sponsors

There is a tendency is to limit the range of frame sponsors who exert influence on the journalist. Ryan, Carragee and Meinhofer[39] while stressing that journalistic frames do not develop in a political or cultural vacuum, concentrate their classification of frame sponsors amongst corporate and political elites, advocates, and social movements. News stories, the authors point out, become a forum for framing contests in which these actors compete in sponsoring their definitions of political issues. The authors believe that the ability of a frame to dominate news discourse depends on multiple complex factors, including its sponsor's economic and cultural resources, its sponsor's knowledge of journalistic practices, and its resonance with broader political values or tendencies in American culture. Other researchers have pointed out that journalism practice allows for political and economic elites as frame sponsors.[40]

In the above case, it can be argued that the convenience that the study of such frame sponsors allows has excluded readers and audiences from the rubric of frame sponsors. That this serves to ultimately limit framing research is particularly pertinent when we examine Goffman's early analysis of how the ''reversibility'' of the reporting-occurances loop plays out and who, therefore, frames whom.

> ''There is a greater issue concerning reversibility. . . . the detailed reporting of a crime may lead to further crimes modelled after the report. But also this sort of circularity may be imagined or presumably occurs, we seem to have a strong feeling that reportings and documentation ought not to be the cause of the actual event they

> record; the causality should all be in the other direction. . . . We have charity balls so that next day the news coverage will appear, the coverage and not the ball serving to advertise the charity. And, of course, when a minor social occasion is graced by an important political speaker, the transcription given out to the major news media is likely to be the reason for the original performance, not merely its consequence.''[41]

It is not just the terrorist who drives airplanes into the World Trade Center who knows what the next day's news will look like (with the frames of ''horror'' ''devastation'' ''terrorism'') but also the citizen who participates in the call for a nationwide candlelight tribute or places a national flag on his/her front yard (with the frames of ''mourning'', ''solidarity'', ''patriotism'' and ''collective will.'') In such cases, it becomes especially difficult to determine who exactly chooses, determines or adopts a frame and, albeit in a more direct way, who is or isn't, today, a frame sponsor.

This permeability of the framing process becomes more compounded in a mass-mediated society such as America, where readers and audiences are picking and lending cues not just from news[42] and entertainment[43] but also from advertising.[44] Moreover, as news becomes more entertainment focused, the line between popular culture and news media begins to blur. The frames we construct to read/view these, then, become increasingly similar. Altheide and Michalowski, for instance, have shown that one such frame – fear-—pervades popular culture and the news media: ''The 'problem frame' is an important innovation to satisfy the entertainment dimension of news. It is an organizational solution to a practical problem: how can we make real problems seem interesting? Or, more to the practical side of news, how can we produce reports compatible with entertainment formats?' ' [45] The authors also describe the problem frame as being a secular alternative to the morality play with characteristics that include narrative structure, universal moral meanings, specific time and place, and an unambiguous focus on disorder that is culturally resonant.

One way to examine how the public deploys its frames and frame-sourcing activity in a manner similar to the way journalists do would be to note the parallels between the framing processes in an instance where no clear frame seems within grasp. Frank Durham,[46] in analysing the case of the coverage of the TWA Flight 800 incident, speaks of it as an event that ''defied framing,'' and ''escaped the discipline of framing'' causing the media to speculate about the cause of the catastrophe.

It can be argued that *speculation* itself is a framing technique, a fundamental social process of meaning-making. I extend Durham's analysis of speculation to a comparison with gossip. Chris Wickham,[47] in an analysis of gossip and resistance amongst the medieval peasantry, speaks of how local knowledge of any given event was made up of three elements - direct witnessing (per visum); hearing about it from someone (per auditum) and what everyone knew, or, common knowledge (publica lama). ''*Even direct witnessing relied, for its context, on common knowledge concerning what the events were all about.*[48] We find a direct link here to Goffman's idea of framing as an organization of experience -- the content and the ''stories'' embedded in gossip indicate how the group socially constructs the world outside as meaningful. Wickham also elaborates: ''. . . indeed, gossip is at its most effective when it is exact, and, even when it is not, it is true to the attitudes of a given social group, that is to say it is meaningful to them.' '[49]

Once it is established that seeking frames is what a social group must do, the next task is to make the leap to including journalists to some extent within our understanding of this social group. While much work has been done into the sociology of news-reporting with regard to the reporters' milieu within the news organization, more research is needed into journalists' informal interactions with their readers/ audience, including with the human subjects they interact with during their day to day coverage and their perceptions, thereby, of what people look for in news coverage. Tuchman,[50] for one, admits that her analysis of the media's ''construction of reality'' is based on newsmakers as professionals and does not consider news-workers as individuals with personal concerns and biases. Journalists say their story-ideas come from many places -- parties, conversations, their own children. . . . even ideas on how to relate these stories, i.e., how to frame them.[51] Tuchman, in fact, touches on this phenomenon when she mentions how journalists operate by their ''common sense.''[52]

The last significant study to examine how journalists are affected by what they believe their readers' frames and schemas to be, was conducted by Ithiel de Sola Pool and Irwin Shulman[53] in which they asked newspersons -- and, later, journalism students -- to draw mental pictures of their public through a process of free association. They found through these experiments that the participants reported good news more accurately than they reported bad news when they thought the reader was ''supportive'' and vice versa when they thought the reader was ''critical.'' The journalists were framing their stories by pre-empting audience readiness and response. What happens in an alternative news organization, where journalists have a different conception of their work and their audience? Nina Eliasoph,[54] in a participant-observation study of an ''oppositional'' radio station notes that even the audience for this oppositional news preferred a diet of news to analytical pieces. Oppositional news, (which we would imagine departed from dominant frames) too, did not have an audience which had an inkling of a theory to employ in the interpretation of scattered daily crises. Eliasoph notes: ''The problem is not that there is news; the problem is that there is little else in the empty American public sphere.'' [55]

There is a substantial body of research that presents the many criticisms of what happens when journalists use frames. Research has established that mass-mediated frames limit the range of interpretable meanings by an audience.[33] Reese points out that the audience-centered, social-psychological approach to framing demonstrates that how a social problem is cast makes a big difference in how one responds to it. [56] Examining framing within the concept of group-centricism in American public opinion, Nelson and Kinder believe that invented by elites and carried by mass media, frames influence public opinion by circumscribing the considerations citizens take seriously.[57] Arguments and images that spotlight social groups may activate stereotypes and prejudices.[58] Iyengar is concerned about the absence of ideological constraint or consistency in American public opinion. [59]

Iyengar has also suggested that exposure to episodic news makes viewers less likely to hold public officials accountable for the existence of some problem and also less likely to hold them responsible for alleviating it. By thus discouraging viewers from attributing responsibility for national issues to political actors, television decreases the public's control over their elected representatives and the policies they pursue.[60] Reese also advances that the framing principle may generate a coverage blackout, yielding little discourse to analyze.[61] This ties in with Entman's suggestion that political elites control the framing of issues. Research has been advanced, however, on the limits to framing effects and to ' 'who can frame'' with experiments that suggest that people rely on the credibility of the source and that elites face a clear and systematic constraint to using frames to influence and manipulate public opinion.[62]

Conclusion:

Given the possibly serious effects of framing in the media, we would move toward a perception that framing as a practice needs to be abandoned. To a large extent, reflecting on the indications from the analysis laid out above, this would be rendered impossible since framing takes place in every form of text or discourse. We have seen that in the case of news coverage where the ' 'story'' has not been laid out, i.e., where the framing is vague, people's own schemas take charge. Mandler points to research findings that the more vague and unclear the message, the greater the deployment of the schemas in making sense of them.[63] Research has pointed to, for instance, the existence and operation of gender and race schemata as determining viewers' perceptions of what they see or hear, to the point of them misunderstanding the text they saw or heard.[64]

It becomes necessary to look at this notion of ' 'promotion of frames by sources'' both from the point of view of the political elite as source and the public as source. While there is considerable research on the political ramifications of framing, such as the strategic value of television news for political elite[67] there is less on the aspect of people's schemas preceding and defining media frames. Once again, such research becomes important when we reflect on Goffman's observation that ' 'observers actively project their frames of reference into the world immediately around them, and one fails to see their so doing only because events ordinarily confirm these projections, causing the assumptions to disappear into the smooth flow of activity.'' [68] We can thus inquire into whether the media, too, confirm projections of the cultural determinants and issue cultures in which they are steeped and with which they interact as social actors rather than just professionals.

Most current research into media-public interaction, however, uses a constructionist model focusing on the *interpretive process* that the public *employs* in making sense of public affairs by using media discourse as a tool rather than an *influencing process* that the public *deploys* in structuring its sense of public affairs by using media discourse, once again, as a tool. This goes beyond the scope of research on merely what audiences want and get out of their news , which has been conducted in at least two instances, [69] and into ' 'how'' and ''why'' audiences want their news framed. This could lead us into an opportunity to link the theory of framing with that of another popular mass communication theory, uses and gratifications.[70]

The framing effects research, combined with the analysis of parallels between traditional narrative texts and news texts might lead us to urge a serious reform in the news media's understanding of their role being not in mere story-telling but in moving beyond the recognition of this fact and into the evolution of a new textual objective, a mandate to inform, record, compile and, mostly, explicate. In the final analysis, journalists referring to news as ' 'stories'' will necessarily play into the frames that the public imposes on journalists. An argument can be advanced for news to then be conceived, regarded, represented, and, finally, reported, as a text that departs from the conventional ones that rely on narrative structures.

There will also have to be some acceptance on the part of scholars of framing that mere establishment of the existence of frames and depiction of its effects in case after case will not lead us to a deeper, multi-layered understanding of why frames take place, who the frame sponsors are and why, finally, frames might be good or bad after all. To the extent that frames exist and thrive in all nature of public discourse, Chris Wickham's appreciation of gossip may lead us to arrive at a renewed understanding and critical appreciation of framing in the news media itself.

> ''What links all these is the construction of a community of talkers, be it a peasant village, or a family, or a drinking group, or an office -- or a class, or a nation -- who accept, or are supposed to accept, a set of shared values and images that locate them in the world of the past and present, and teach them how to deal in, and with, that world. Look for that talking and you will find those values and images.' '[71]

NOTES

(1) Erving Goffman, *Frame Analysis: Essays in the Organization of Experience* (Cambridge, Massachussetts: Harvard University Press, 1974).
(2) Goffman, Frame Analysis, 14-15
(3) Goffman, *Frame Analysis*, 53.
(4) Stephen Hess, Ultimate Insiders, Pverill Squire, "*Who Gets National News Coverage in the U.S. Senate*?" American Politics Quarterly, (16, April 1988), 91.
(5) Robert Darnton, "*Writing News and Telling Stories*" (Daedalus, 1975; 104, 2), 175-194
(6) Walter Lippmann, *Public Opinion*, (NY:MacMillan, 1922)
(7) Edward Jay Epstein, *News From Nowhere*, (NY: Random House Inc.,1973),164
(8) Z. Pan and G.M.Kosicki, Framing Analysis: An Approach to News Discourse, Political Communication (10, 1993) 55-75.
(9) William Gamson and Andre Modigliani, Media Discourse and Public Opinion on Nuclear Power, American Journal of Sociology, (95, 1989) 1-37.
(10) Gaye Tuchman, *Making News: A Study in the Construction of Reality*, (NY:MacMillan, 1972)
(11) David L. Altheide and R. Sam Michalowski, Fear in the News: A Discourse of Control, The Sociological Quarterly, (40, i3, Summer 1999), 475.
(12) Shanto Iyengar, *Is Anyone Responsible?* (Chicago:University of Chicago Press,1991)

(13) Jean Matter Mandler, *Stories, Scripts, and Scenes: Aspects of Schema Theory*. Hillsdale, NJ:Lawrence Erlbaum)

(14) Mandler, *Stories, Scripts,* 18.

(15) J.B. Black and G.H. Bower, Episodes as Chunks in Narrative Memory, *Journal of Verbal Learning and Verbal Behavior,* (18, 1979) 187-198; Jean Matter Mandler and N.S. Johnson, Remembrance of Things Parsed: Story Structure and Recall, *Cognitive Psychology*, (9, 1977) 111-151; R.C. Omanson, An analysis of narratives: Identifying Central, Supportive and Distracting Content, *Discourse Processes* (5, 1982).195-224; N.L. Stein and C.G. Glenn, An analysis of story comprehension in elementary school children. In R. Freedle (Ed.) New Directions in Discourse Processing. (Norwood, NJ: Ablex, 1979).

(16) Iyengar, *Is Anyone Responsible?*

(17) Robert H. Wicks, *Schema Theory and Measurement in Mass Communication Research: Theoretical and Methodological Issues in News Information Processing.* Communication Yearbook, 15.

(18) Tom Grimes, "Encoding TV News Messages Into Memory," *Journalism Quarterly* 67 (Winter 1990); 757-66; Thorndyke and Yekovich, *A Critique of Schemata;* Tom Grimes and Robert Drechsel, Word-Picture Juxtaposition, Schemata, and Defamation in Television News, *Journalism and Mass Communication Quarterly*, 73 (1, Spring 1996): 169-180.

(19) Pamela Johnston Conover and Stanley Feldman, "How People Organize the Political World: A Schematic Model" 28, *American Journal of Political Science*, 28 (1, 1984): 95-126.

(20) Shanto Iyengar and Donald R. Kinder, News That Matters,(Chicago: University of Chicago, 1987); Lawrence R. Jacobs and Robert Y. Shapiro, Issues, Candidate Image and Priming: The Use of Private Polls in Kennedy's 1960 Presidential Campaign. American Political Science Review, (88, 1994) 527-41; Jon A. Krosnick and Donald R. Kinder, "Altering the Foundations of Support for the President through Priming" *American Political Science Review*, 84, 497-512.

(21) Susan T. Fiske and Shelley E. Taylor. *Social Cognition*. 2n ed.(NY: McGraw Hill, 1991)

(22) D. Kahneman and A. Tversky, "Choices, Values and Frames"*American Psychologist,* (39 1984): 341-50.

(23) Bernard Roshco, *Newsmaking*, (Chicago:The University of Chicago Press, 1975);Gaye Tuchman, *Making News: A Study in the Construction of Reality*, NY: MacMillan, 1978; Herbert J. Gans, *Deciding What's News, A Study of CBS Evening News, NBC Nightly News, Newsweek and Time*, (NY:Vintage Books: 1979).

(24) Stephen D. Reese, Prologue—Framing Public Life: A Bridging Model for Media Research, in Stephen D. Reese, Oscar H. Gandy, Jr., August E. Grant, (eds.) *Framing Public Life: Perspective on Media and Our Understanding of the Social World(* NJ, London: Lawrence Erlbaum Associates, 2001).

(25) Gamson and Modigliani, *Media Discourse*.

(26) Todd Gitlin. *The Whole World is Watching*. (Berkeley:The University of California Press) 1980.

(27) William L. Gardner and Bruce J. Avolio, The Charismatic Relationship: A Dramaturgical Perspective, *Academy of Management Review*, 23 (1, January 1998): 32-58.

(28) William A. Gamson and David S. Meyer, Framing Political Opportunity. In *Comparitive Perspectives on Social Movements*, Doug McAdam, John D. McCarthy and Mayer N. Zald.Eds. (Cambridge University Press, Massachussetts, 1996) 76.

(29) Gaye Tuchman, *Making News*.

(30) Robert D. Benford and David A. Snow, Framing Processes and Social Movements: An Overview and Assessment, *Annual Review of Sociology*, (2000): 611-638.

(31) Ann Swidler, Culture in Action: Symbols and Strategies," *American Sociological Review* (1986): 273-86.

(32) Thomas E. Nelson and Donald R. Kinder, Issue Frames and Group-Centrism in American Public Opinion, *The Journal of Politics*, (58, 4, 1996):1055-1078.

(33) Nelson and Kinder, *Issue Frames*, 1073.

(34) Phillip E. Converse, "The Nature of Belief Systems in Mass Publics"in *Ideology and Discontent*, David Apter, Ed., (NY: Free Press,1964).

(35) Iyengar, Is Anyone Responsible?

(36) Ulric Neisser, Cognition and Reality: Principles and Implications of Cognitive Psychology, (San Francisco: W.H. Freeman)

(37) Robert M. Entman, Framing: Toward Clarification of a Fractured Paradigm, Journal of Communication, (43,4,1993):51-8.

(38) Reese, *Framing Public Life*,13.

(39) Charlotte Ryan, Kevin M. Carragee and William Meinhofer, Theory into Practice: Framing, the News Media, and Collective Action ,*Journal of Broadcasting and Electronic Media,* (45, i1p, Winter 2001), 175-184.

(40) William A. Gamson, David Croteau, William Hoynes and Theodore Sasson, "Media Images and the Social Construction of Reality, *Annual Review of Sociology*. (18, 1992), 373-93.

(41) Goffman, Frame Analysis, 79.

(42) Shanto Iyengar and Donald Kinder, *News That Matters*, (Chicago, IL: University of Chicago Press, 1987).

(43) Neil Postman, *Amusing Ourselves to Death: Public Discourse in the Age of Show Business* (NY:Viking Penguin Inc., 1985); Joshua Gamson, Incredible News: News Media Become Entertainment Oriented, *The American Prospect*, 19 (Fall 1994): 28-35.

(44) Robert Goldman and Stephen Papson, *Nike Culture*, (London:Sage, 1998) .

(45) David L. Altheide and R. Sam Michalowski, Fear in the News: A Discourse of Control, *The Sociological Quarterly*, (40 i3, Summer, 1999) 475-499, 479.

(46) Frank D. Durham, News Frames as Social Narratives:TWA Flight 800, *Journal of Communication,* Autumn 1998.

(47) Chris Wickham, Gossip and Resistance Among the Medieval Peasantry, *Past & Present*, (160, 1998), 3-24.

(48) Wickham, Gossip and Resistance, 4.

(49) Wickham, Gossip and resistance, 7.

(50) Tuchman, Making News.

(51) Darnton, Writing News

(52) Tuchman, Making News.

(53) Ithiel de Sola Pool and Irwin Shulman, "Newsmen's Fantasies, Audiences and Newswriting" *Public Opinion Quarterly,* (Summer, 1959.)

(54) Nina Eliasoph, Routines and the Making of Oppositional News,"Critical Studies in Mass Communication, 5, (1988) 313-334.

(55) Eliasoph, Routines, 334.

(56) Entman, *Framing*; Gamson&Modigliani, *News Discourse*, ; Gitlin, *The Whole World*; Pan&Kosicki, *Frame Analysis*; Durham, *News Frames.*

(57) Reese, *Framing Public Life*.

(58) Iyengar, *Is Anyone Responsible*, 2-3.

(59) Nelson and Kinder, *Issue Frames*

(60) Iyengar, *Is Anyone Responsible?*

(61) Iyengar, *Is Anyone Responsible*?

(62) Reese, *Framing Public Life.*

(63) Entman, *Framing.*

(64) James N. Druckman, On the Limints of Framing Effects: Who Can Frame? *The Journal of Politics*, (63, i4, Nov 2001) 1041-1068

(65) Uric Neisser and R. Becklen, "Selective Looking: Attending to Visually Specified Events," *Cognitive Psychology* (7,1975): 480-94.

(66) Tom Grimes, "encoding TV News Messages Into Memory," *Journalism Quarterly* 67 (Winter 1990); 757-66; Thorndyke and Yekovich, *A Critique of Schemata;* Tom Grimes and Robert Drechsel, Word-Picture Juxtaposition, Schemata, and Defamation in Television News, *Journalism and Mass Communication Quarterly*, 73 (1, Spring 1996): 169-180.

(67) Iyengar, *Is Anyone Responsible*?

(68) Goffman, *Frame Analysis*, 39.

(69) Bernard Berelson, What 'Missing the Newspaper' Means, in Lazarsfeld and Stanton, eds., *Communication Research* 1948-49, (1949); Ted Smith and Robert Lichter, *What the People Want from the Press*, Center for Media and Public Affairs (1997).

(70) Jay G. Blumler and Elihu Katz, The Uses of Mass Communication: Current Perspectives on Gratification Research. (London: Sage,1974).

(71) Wickham, Gossip, 7.

Motivations to Form Opinions Based on Reference Group or Generalized Others' Opinions

Irkwon Jeong*
Doctoral Candidate

Dr. Carroll J. Glynn
Professor and Director

School of Journalism and Communication
The Ohio State University
Columbus, Ohio

Submitted to the Communication Theory and Methodology division for presentation at the
Annual Conference of the AEJMC
Aug. 7-10, 2002 in Miami Beach, FL, USA

Questions concerning this manuscript should be addressed to

Irkwon Jeong
Telephone: 614-292-5943
Fax: 614-292-2055
Email: jeong.24@osu.edu
Mailing address: 3016 Derby Hall 154 N. Oval Mall,
Columbus, OH43210-1339, U.S.A

Motivations to Form Opinions Based on Reference Group or Generalized Others' Opinions

ABSTRACT

This paper explores how similarity to a group affects activation of group categorization, which facilitates conformity to specific group opinions rather than generalized others' opinion. When people need to reduce subjective uncertainty of their opinions, they conform to group opinions. This group can be classified as either "specific others" or "generalized others." If a group (specific others) is categorized as having a special quality, which defines the group as more relevant to the issues than any other groups, people are more likely to agree with the group's opinions than generalized others' opinions. We examined whether issue relevance and attention affect activation of group categorization as well as whether the effects are different for those who are similar to the specific others from those who are not. Data were collected using a nation wide telephone survey (n= 596). We measured individual's own opinion, perceptions of specific others' opinions, and generalized others' opinions. Next we compared individual's own opinion with perceptions of specific others', and individual's own opinion with generalized others' opinions. We found that issue relevance and attention are positively related to agreement with specific others' opinions and the effects are greater among those who are similar to the specific others than those who are not. The more people attentive to issúes that are related to them, the more likely they will form opinions based on specific others.' We conclude that those who are similar to the specific others group are more likely to separate a group of others as having more relevant to the issues from generalized others (activation of group categorization).

Motivations to Form Opinions Based on Reference Group or Generalized Others' Opinions

This paper aims to understand the relationship between similarity to specific others group and individual's agreement with specific others' opinion for issues that are more related to a group of people (specific others) than others. The present authors examine how issue relevance and attention affect separation of the specific others from the generalized others (activation of group categorization) and the manner which the activated group categorization influences the process of conforming to certain group opinions. The paper also provides a theoretical framework for group conformity and group categorization. First, it reviews the "subjective uncertainty reduction" approach, which suggests that people have a motivational reason for conforming to group opinions. Second, the paper explores the relationship between conformity to group opinions and group categorization, which is a process whereby a group (specific others) becomes salient as having a special quality defining the group as more relevant to the issues than any other groups. Third, it examines how activated group categorization affects the conformity process by examining the effects of issue relevance and attention on agreement in relation to specific others' and generalized others' opinions. Moreover, it compares the effect on those who are similar to the specific others and those who are not.

Numerous theoretical and empirical studies in public opinion have forged a great deal of interest in understanding the relationship between individually held opinions and perceptions of group opinions (e.g., Davison 1983, Glynn 1989, 1996, Noelle-Neumann 1974, 1984, Ross Greene and House 1977). These studies have shown that individual opinions and attitudes do not develop in a social vacuum, but are influenced, shaped, contradicted, and reinforced by the expressed and implied opinions of others (cf. Asch 1952, Deutsch and Gerard 1955, Festinger

1954, Glynn 1996, Kelman 1961, Sherif 1936, Turner 1982, 1985). The studies also suggest that the agreement between one's own opinion and perception of other's opinions is an outcome of interaction between these two variables. That is, the perception of other's opinions influences the construction of private opinions, and vise versa.

There has been a long line of research that has explored in what situations people are influenced by perceptions of others' opinion. The situation is closely related to demographic factors such as race and gender, knowledge, personality traits, and motivation. Uncertainty reduction is one of the motivational components that push people to conform to group opinions. When people are uncertain of their own opinion they are more likely to conform to group opinion than when they are certain (Hogg and Mullin 1999, Salmon and Kline 1984, Tiedens and Linton 2001, Weary 1990). In this case, by agreement with others' opinion, people conform to group norms and reduce subjective uncertainty (McGarty Turner Oakes and Haslam 1993, Tuner 1985, 1991).

People have a fundamental need to feel certain about their world, their place, and their judgment. Subjective certainty renders existence meaningful and thus gives one confidence about how to behave, and what to expect from the physical and social environment within which one finds oneself and therefore, uncertainty reduction is a fundamental human motive that is satisfied (Hogg and Mullin 1999). Hogg and Mullin (1999) argue that subjective uncertainty reduction is perhaps primarily satisfied by group membership: "People join or form groups to reduce uncertainty; they join or form one group rather than another group because it is more relevant to uncertainty reduction for that person in that context" (p.255).

Depersonalization process is frequently associated with conforming to group opinions. Depersonalization explains how products of social interaction within and between groups (e.g., group norms- cf., Sherif 1936) can be internalized by individuals through the operation of cognitive processes, and can thus influence human conduct (Hogg and Mullin 1999). That is, depersonalization makes a person think as a member of a group, rather than an independent entity. For a depersonalized person, agreement with group opinion transforms "the 'uncertain self' into a 'certain self' governed by an in-group prototype that is consensually validated by fellow in-group members" (Hogg and Mullin 1999, p.269).

At the individual level, people do not strive for certainty about all aspects of life, but only those, which are subjectively important (Hogg and Mullin 1999). However, at the group level, in every group, certain numbers of people are uncertain of their opinion and thus motivated to agree with the group opinion. In light of this, agreement with group opinion is a consistent phenomenon (at the group level).

Conformity to generalized others

There are two approaches concerning the subjects of the group opinions: "generalized others" and "specific others." When conforming to the generalized others perspective, the "others" represent people in general. There is no such group that is more relevant to the issues than other groups. Generalized others can be defined as all people but oneself. In the perceptual field, generalized people can represent average attitude, value and opinion of the society.

The conformity to the generalized others perspective has roots in Solomon Asch's conformity experiments. Asch (1952) investigated persuasive influences that lead to conformity. In the experiments, groups of seven to nine people were shown lines of clearly varying lengths and were asked which lines were the longest and which were the shortest. Only the last person to respond in the group was a true 'naïve' subject. All of the other members of this group were confederates. After listening to the confederates' unanimous incorrect judgments the naïve subject conformed to the confederates.

The implication of Asch's experiment is that once people are faced with normative societal influence, they tend to conform to the positive expectations of others (Deutsch and Gerard 1955) and the degree of group conformity is maximized in a unanimous majority situation (Doherty 1998). When conforming to group opinions, people do not care about whether the opinions are wrong or not but rather whether others view their opinions as strange or weird. The fundamental reason for agreeing with group opinions is to avoid dissonance with others and hold what others would consider an "acceptable" opinion. People consider how closely they are located from the "average" of others in the society. In this case, the "others" (in this case, generalized others) are not the people who are specifically related to the issues but they are all persons who are simply exposed (not related) to the issues. There is no differentiation among the others. Therefore, they are considered generalized others.

Along these lines, Tedeschi and his colleagues proposed a theory of 'impression management,' which suggests that people are not so much concerned with their own perceptions but with the impressions others have of them (Tedeschi Schlenker and Bonoma 1971). People try to manage their impressions so that they appear consistent to others (Tedeschi et al. 1971). When they find inconsistency in these images, they feel uneasy. People believe that the appearance of consistency will enhance their credibility, whereas inconsistency looks foolish (Ross and Conway 1986).

Noelle-Neumann also emphasizes the role of perception of the generalized others' opinion in her spiral of silence theory (Noelle-Neumann 1974, 1984). The general principle of the spiral of silence theory is that individuals continually scan their social environments for clues pertaining to the majority and minority opinions on issues with which they are concerned (among generalized others). When they perceive that their opinions are gaining ground, they will tend to express their views in public; when they perceive that their views are losing ground, they will be more reluctant to speak out in public.

Conformity to specific others

In the conformity to "specific others" approach, people use a reference for a specific group of people who have a special quality that defines the group as more relevant to the issues than any other groups. People tend to think they can have a better sense of "good" opinion from the specific others group rather than the generalized others. For those who are not certain of their own opinion, conformity to specific others' opinion can reduce their subjective uncertainty. All things being equal, people prefer to compare themselves with similar rather than dissimilar others when they seek better information or better reference (e.g., Wheeler and Koestner 1984, Wheeler Koestner and Driver 1982). Similar others can be defined as people whom we categorize as members of the same group as ourselves (Hogg and Mullin 1999). Uncertainty is reduced when similar others agree with us, or when we can agree with similar others (see Abrams 1996, Abrams Wetherell Cochrane Hogg and Turner, 1990).

This conformity to specific others approach is rooted in the evidence provided in Muzafer Sherif's experiments concerning the 'autokinetic' phenomenon (Sherif 1936). In Sherif's experiments, subjects were shown a point of light in a darkened room with no point of reference. Subjects perceived the light to be moving even though it was stationary. Sherif suggested that people interact socially to resolve the ambiguity of the light 'movement' and eventually, members of the group converge to make a consensus as a group.

The implication of Sherif's experiment is that using ambiguity as a stimulus produces uncertainty which then leads to dependence on others sharing the same experience for information, mutual influence, and the formation of shared norms (Shaw 1976). Leon Festinger (1954) raises the idea of social comparison mechanisms, in which individuals appear to formulate and use group norms as a basis for justifying their own opinions. Festinger claims that because *in-groups* are often composed of similar others, they are more likely candidates for social comparison than are *out-groups*. As such, in-groups should serve as potent sources of information about social and physical reality (Festinger 1954).

Group categorization

Sherif's and Asch's experiments differ in terms of the degree of agreement. According to Nail (1986), there are four ways people manage their own internal opinions as compared to relevant group opinions: (a) conforming privately and publicly (conversion), (b) conforming publicly but not privately (compliance), (c) conforming privately but not publicly (anti compliance), and (d) nonconformity at both private and public levels (independence). In Sherif's experiments, agreement means acceptance of the group opinion as the correct opinion. Individuals reconcile this by comparing consistency between attitudes and behaviors and also between the expressed opinion and the internally held opinion.

However, in Asch's (1952) experiments, individuals may publicly agree with confederates' public statements, but not necessarily believe those statements (Asch 1952; Glynn 1996). Agreement in the Asch's paradigm is interpreted to be public compliance with the 'yielders' motivated by a fear of ridicule for standing out (Glynn et al. 1999, Turner 1985).

According to Nail's typology, individuals in Sherif's (1936) experiments were examples of conversion, where a person conforms both privately and publicly. In the Asch experiments, often people who conformed knew their own opinions were the correct opinions but they did not reveal these opinions because they did not want to appear to be different from the majority. These people did not conform internally; they retained their belief based on what they observed, but publicly, they conformed (Salmon and Kline 1984).

We assume that a process of conversion into group opinions requires something more, which is not required in a process of compliance to group opinions. A change in attitudes and behaviors is necessary for conversion but a change only in behaviors is enough for compliance to occur. Activation of group categorization leads to change in attitudes. Group categorization is defined as a process in which a group (specific others) becomes salient as having a special quality defining the group as more relevant to the issues than any other groups. Some categories are more salient if they are relevant to the context of the social categorization (van Knippenberg van Twuyver and Pepels 1994, Oakes Turner Haslam 1991). If the salient categories are primed, people are motivated to activate group categorization based on the primed categories. If people find a group has a special quality concerning the issues they are prone to think that the group can provide better information. In Sherif's experiment, the naïve person agreed with the confederates because they had experienced the experiment and thus s/he thought the confederates could provide more accurate and appropriate information than those who had not. When people find a group can provide a "better" opinion than any other group, they are more likely to agree with the special group's opinions than with the generalized others' opinions.

Obviously a group opinion cannot be better than any other group opinion (Festinger, 1954). People's expectation that a group has more accurate and appropriate information for a "valid" opinion is more of a subjective than objective judgment. Consequently, activation of group categorization is also an outcome of subjective decision. That is, regardless of contextual factors, people may or may not activate group categorization. Here, we argue that similarity to the specific other can affect activation of group categorization and thus group categorization occurs more often among similar persons than among dissimilar persons. According to Abrams (1996) and Abrams et al. (1990), subjective uncertainty can be reduced when one's opinions are congruent with similar others' opinions. Therefore, if a group is salient in terms of relevance to the issues and a person finds s/he is similar to the relevant group they are more likely to activate group categorization. That is, the person will separate a specific others from generalized others.

Hypotheses

We presume that three conditions must occur in order to activate group categorization. First, a person must attend to the issues to a certain extent so that s/he can have a sense of which group has special relation to the issue and the how similar s/he is to the group. Second, a group should be differentiated from other groups in regards to the specific quality relating to the issues. Third, a person should perceive s/he is similar to the differentiated group. In this paper, we will examine if those three conditions actually affect activation of group categorization and thus agreement with specific others' opinion.

First, we will test effect of attention on agreement with specific others' and generalized others' opinions. If people are not paying attention to the issues to some extent, they cannot be aware of the climate of other's opinions and do not feel pressure to conform to certain group opinions. In this case, attention is a necessary condition for detecting the climate of other's opinions and thus group categorizations. Therefore, we assume that attention will be positively related to agreement with both specific others' and generalized others' opinions. However, since agreement with group opinion is consistent at the group level but not at the individual level, we will measure the rate of agreement in a group rather than when a person agrees or not. Thus, we hypothesize:

> H_{1a}: At the group level, the more people that pay attention to the issues, the more they will agree with specific others' opinions.
>
> H_{1b}: At the group level, the more people that pay attention to the issues, the more they agree with generalized others' opinions.

Second, we will measure the degree to which an individual pay attention to the issues and how it affects their agreement with specific others' opinions according to similarity to specific others. We predict that the effect of attention on agreement will be smaller among those who are similar to specific others than among those who are not. When issues are relevant to specific others, those who are similar to specific others are more motivated to monitor the climate of others' opinion than those who are not. In this case, issue relevance replaces some portions of the effect of attention on agreement with specific others' opinion. In order to measure this interaction effect of relevance and attention on the issues on agreement with specific others' opinions, we created an interaction term by multiplying issue relevance and attention. We hypothesize:

> H_2: The effect of attention on agreement with specific others' is stronger among those who are similar to the specific others than among those are not.

Third, we will test if activated group categorization based on similarity to the specific group differently affects agreement with specific others' and generalized others' opinions. We assume when people find that a specific group is more relevant than any other group to certain issues *and* they are similar to the specific group, they are motivated to activate group categorization. Once group categorization is activated, people rely more on a specific group opinion than generalized others' opinion when they conform to group opinions.

> H_{3a}: At the group level, those who are similar to the specific others are more likely to agree with specific others' opinions than with generalized others opinions.

On the other hand, those who are not similar to the specific others will not activate group categorization. Consequently, they do not separate specific others from generalized others. Therefore, there is no difference between agreement with specific others' opinion and generalized others' opinion.

> H_{3b}: At the group level, among those who are not similar to the specific others, there is no difference between agreements with specific others' and generalized others' opinions.

Method

For the purpose of this research, a national telephone survey was conducted between May 5th and May 30th, 2000. Professional telephone interviewers surveyed 596 randomly selected adults throughout the 48 contiguous states and Washington, D.C.. A total of 4,194 randomly generated telephone numbers were used for this survey, with many numbers being called as many as 10 times to try to reach a respondent at the respondents' preferred time. Of these numbers, 1,790 were presumed to reach a household with an eligible respondent. From these households, interviews were completed in 33% of the cases. Among those households in which interviewers actually spoke with an eligible adult respondent, interviews were completed in 76% of the cases. The confidence level was 95% and the standard error was +/- 4%. Five hundred and ninety six adults participated in the study. Ages ranged from 19 to 95, with a mean age of 46 years old. The majority (62%) were women. As for education, 33% completed high school, and more than half of the respondents (61%) had attended some college or technical school. The demographic data suggests that the respondents are slightly older and more educated than the general population, and more women than men were included in the sample.

The survey instrument consisted of items designed to measure: own opinions, perceptions of specific others' opinions, and perceptions of generalized others' opinions on four controversial social issues. Given the nature of this study, each of the issues selected was associated with a specific group of respondents. The specific group is operationally defined as a group of persons having particular qualities that are directly related to the issues. For example, on issues relating to tuition for college level education, the specific group is college students. The four issues include: 1) governmental support for health care for the elderly, 2) Medicare coverage extension for the elderly, 3) budgets for education, and 4) media coverage of school violence. Among the four current political issues, two issues are more relevant to the elderly than the young: governmental support for health care and Medicare coverage extension. The other two issues are more relevant to those who have school-age children than those who do not: budgets for education, and media coverage of school violence.

The dependent variable in the study is the "agreement score," which indicates the level of agreement between one's own opinion and perceptions of two group opinions: specific others' and generalized others.' We measured perceptions of each group's opinions by asking a question. For example, for the governmental support for health care for elderly issue, we asked two questions: "How do you think most elderly people feel about government helping people pay for doctors and hospital bills?" (the measurement of perception of specific others' opinions); "How do you think most people in your own community feel about government helping people pay for doctors and hospital bills?" (the measurement of perception of generalized others' opinions)

If one's own opinion was congruent with one's perception of group opinion, s/he was given "1," otherwise "0." Each of the respondents was given two agreement scores: agreement score for specific others and agreement score for generalized others. For example, if someone agreed with specific others' opinions for one of the two elderly issues and agreed with generalized others for none of the two elderly issues, the respondent had "1" on the agreement score with specific others and "0" on the agreement score with generalized others. For an another example, for the school-age children issue, if someone agreed with specific others on two issues and agreed with generalized others on one of the two, s/he was given "2" on the agreement score with specific others and "1" on the agreement score with generalized others. Therefore, each respondent was given four agreement scores: For the elderly issues, agreement scores with specific others' and generalized others' opinions for elderly issues; agreement scores with specific others' and generalized others' opinions. Each of the four agreement scores ranges from as low as 0 to as high as 2.

The independent variables consist of issue relevance and attention to the issues. Issue relevance was measured by whether someone is more relevant than others to the issue. If a person had particular qualities that are directly related to the issues, they were coded as 1. Those who do not present certain qualities were coded as 0. For the sake of simplicity, we infer relevance from speculation of relationship between one's demographics and the traits of the issues. For the issues of governmental support for health care and Medicare coverage extension, those who are over 55 years old were coded as 1. Others were coded as 0 because in general, age 55 is believed to be the age people retire or start waiting of retirement. For the issues of budgets for education and media coverage of school violence, those who have one or more school-age children were coded as 1 and those who do not have children were coded as 0. Those who were relevant to the issues were also considered to be those who were similar to the specific others' group.

The other independent variable, attention, was measured by asking the question: "How much attention do you pay to news about issues that affect [the elderly, parents of school-age children]?" The scales of attention included "no attention," "not much," "some," and "a lot." In addition, to measure the interaction effect between relevance and attention, we created an interaction term by multiplying relevance and attention.

Findings

Regarding the relationship between attention to the issues and the selection of whether individuals choose to agree with specific others' or generalized others' opinions, we hypothesized that at the group level, the more people that pay attention to the issues, the more they will agree with specific others' opinions (H_{1a}). Also, at the group level, the more people that pay attention to the issues, the more they agree with generalized others' opinions (H_{1b}). Table 1 shows the results of regression of agreement with specific others and generalized others on attention to the issues. For both of the issues, attention has positive effects on agreement with specific others' opinions, which supports H_{2a}. The unstandardized coefficients suggest that for the elderly issues, each one unit increase in attention on average is associated with a .140 increase in the agreement score ($p< .01$). For the school-age children issues, one unit increase in attention on average is associated with a .079 increase in the agreement score ($p< .05$). On the other hand, the effect of attention on agreement with generalized others' opinions is significant for elderly issues ($b= .081$, $p < .05$) but not for school-age children issues. For elderly issues, the standardized coefficients for specific others is .174 and for generalized others is .098.

--- TABLE 1 ABOUT HERE –

Hypothesis 2 states that the effect of attention on agreement with specific others' is stronger among those who are similar to the specific others than among those who are not. Table 2 presents the results of OLS regressions of agreement with specific others' opinion on attention, relevance, and interaction between attention and relevance for the elderly issues. Attention and relevance have positive effects on agreement with specific others' opinions while interaction between attention and relevance have negative effects on agreement with specific others' opinions. The unstandardized coefficients suggest that each one unit increase in attention scale on average is associated with a .164 increase in agreement score ($p < .001$). Those who are relevant to the issue on average are a .539 higher in agreement score than those who are not ($p < .05$). On the other hand, each one unit increase in the interaction between attention and relevance on average is associated with a .149 decrease in agreement with specific others' opinions ($p < .05$). The standardized coefficients indicate that relevance ($\beta = .401$) is stronger than attention ($\beta = .202$) in predicting agreement with specific others' opinions in the model. The model as a whole explains 3.0% of the variance in agreement with specific others' opinions (Adjusted $R^2 = .030$).

--- TABLE 2 ABOUT HERE –

H_{3a} predicted that at the group level, those who are similar to the specific others are more likely to agree with specific others' opinions than with generalized others opinions while H_{3b} predicted that at the group level, among those who are not similar to the specific others, there is no difference between agreements with specific others' and generalized others' opinions. To test these hypotheses, paired *t* tests were run. The results of the paired *t* tests presented in Table 3 demonstrate that for school-age children issues, those who are similar to specific others agree with specific others' opinions (1.632) more than generalized others' opinions (1.564). The difference is significant ($p < .05$), which support hypothesis 3a. On the other hand, for those who are not similar to specific others, the results of the paired *t* tests for both elderly issues and school-age children issues show that the differences between agreement with specific others' and generalized others' opinions are not significant. These results support hypothesis 3b. Note that the differences between the scores of agreement with specific others and generalized others are larger for school-age children issues than for elderly issues both among those who are similar to specific others (.024 vs. .068) and among those who are not similar to the specific others (.011 vs. .027).

--- TABLE 3 ABOUT HERE –

Discussion

Overall, the results suggest that relevance and attention to the issues were significant predictors of agreement with specific others' opinions, and that relevance is the stronger predictor than attention. The results also suggest that people activate group categorization differently based on similarity to specific others. If they are similar, they are more likely to activated group categorization. The activate group categorization influences people to agree with specific others' opinions.

Regarding the effects of issue relevance and attention on agreement with specific others' and generalized others' opinions, the results indicate a positive relationship. The results suggest that the more attentive people are to the issues, the more likely they are to agree with both specific others' and generalized others' opinions. For agreement with specific others' opinions, the results of standard coefficients suggest that the effect of issue reliance is stronger than effect of attention on agreement with specific others' opinions.

Turning to the interaction effect between relevance and attention to the issues on agreement with group opinions, the results indicate that the effect of attention on agreement with group opinion varies by issue relevance. The negative effect of interaction between attention and relevance on agreement with specific others' opinions suggests that the effect of attention on agreement with specific others' is smaller among those who are similar to specific others than among those who are not. Two explanations can be suggested for the negative effect of the interaction between relevance and attention on agreement with specific others' opinions. First, since those who are similar to specific others are more relevant to the issues than those who are not similar to the specific others, the similar people are conceivably more attentive to the issues than those who are not. Therefore, effect of issue relevance can replace some portions of effect of attention on agreement with specific others' opinions. Second, although certain extent of attention is indispensable to monitor the climate of others' opinion, the extra portion of attention for "too highly" attentive persons, can reduce subjective uncertainty of their own opinion. If people thought they had paid enough attention to obtain necessary information for "valid" opinion, they would not be uncertain of their own opinions. Therefore, they would not be pressed to conform to a group opinion. Extra attention prevents depersonalizing process.

The results of paired *t* tests indicate that those who are similar to specific others are more likely to agree with specific others' than generalized others' opinions; for those who are not similar to specific others, there is no significant difference between agreement with specific others' and generalized others' opinions. These findings suggest that people activate group categorization differently according to similarity to specific others. Those who are similar activate group categorization and therefore rely on specific others' opinions more than generalized others' opinions when they form their own opinions. On the other hand, those who are not similar to specific others hardly activate group categorization. Specific others do not exist for these people.

The results of paired *t* tests show that agreement score differences between specific others and generalized others were larger for school-aged children issues than elderly issues. One possible explanation for these results would be the difference in size among the various specific others. When parents of school-age children are the specific others, the number of the group members is half the size of generalized others. We assume that some people may think they should agree with specific others' opinions when the specific others' size reaches certain level of percentage of the population. There is a possibility that the ratio of specific others to the population might moderate an individual's desire to be correct.

Considering the notions of "mass society," we suggest that the effects of relevance and attention on agreement with specific others' opinions were stronger in the past than now. Although we did not directly measure the difference of the effects, we can infer it regarding the characteristic of the specific others in "mass society" where subgroups are either similar to each other or overlapped, and where intergroup heterogeneity is pervasive. Agreement with specific others' opinions occurs when the specific others are clearly differentiated from the rest of others or generalized others. However, in mass society, the distinctiveness of a specific subgroup is less clear than in past society. In light of this, people from contemporary society are more likely to use generalized others' opinions as a platform for their own opinion than their precedents. In this sense, impression management and spiral of silence will be more observable in contemporary mass society than in past society.

There were a few possible limits to our study including nonresponse error at the item level (missing data), skewness of the sampling toward high education, and question wording effect. In addition, we assume that substantial portions of the population construct their opinion on the spot when being asked. If an opinion was primed, the primed opinion might have triggered to give the same opinion repeated to the following questions. In this study, respondents were asked to give their own opinions followed by specific others' opinions then generalized others' opinions. If they had not constructed a perception of other's opinion prior to the interview, they must construct the perception of the other's opinions at the moment they were asked to answer. The answers of their own opinion can be used as a frame when they construct the perceptions of other's opinion. That is, they might project to some extent their own opinion onto specific others' or generalized others' opinions or both. In this case, the results of the projections will be the same results as in conformity of one's own opinion to group opinions but the motivation underlying the results (agreement with group opinions) would not be subjective uncertainty reduction. This order effect can be an obstacle if one wants to observe the opinion formation process based on specific others' opinions or generalized others' opinions. We must account this harm of question order effect in future studies if we want to have a better understanding of how one forms opinions in relation to specific others' or generalized others' opinions.

Appendix: Tables

Table 1. Regression of Agreement with Specific Others' and Generalized Others' Opinions on Attention

Issue	Specific others'			Generalized others'		
	b	S_b	β	b	S_b	β
Elderly Issues	.140**	.034	.174	.081*	.037	.098
School-Age Children Issues	.079*	.035	.101	.049	.037	.054

** $P < .01$ * $P < .05$

Table 2. OLS Regressions of Agreement with Specific others' Opinions on Attention, Relevance, and Interaction between Attention and Relevance for the Elderly Issues

	b	S_b	β
Constant	1.074***	.126	
Attention	.164***	.039	.202
Relevance (directly relevant:1, little relevant:0)	.539*	.318	.401
Attention * Relevance	-.149*	.090	-.398
R^2		.035	
Adjusted R^2		.030	
N		553	
d.f.		550	
S.E.E.		.583	

*** P< .001   * P< .05

Table 3. Agreement of Private Opinion with Specific Others' and General Others' Opinions by Similarity to the Specific Others

Issues	Similarity to the Specific Others (N)	Specific Others'		Generalized Others'		T-test (R-G)
		M	SD	M	SD	
Elderly Issues	Similar (374)	1.604	.603	1.615	.596	-.011
	Dissimilar (123)	1.691	.545	1.667	.568	.024
School-Age Children Issues	Similar (255)	1.577	.590	1.604	.558	-.029
	Dissimilar (204)	1.632	.550	1.564	.596	.068*

Note. One-tailed t-test between agreement with specific others' and generalized others' opinions.

* P<.05

REFERENCES

Abrams, D. (1996): 'Social identity, self as structure and self as process'. In Robinson, W.P. (ed.), *Social Groups and Identities: Developing the legacy of Henri Tajfel*. Oxford, England: Butterworth-Heinemann, pp. 143-67.

Abrams, D., Wetherell, M., Cochrane, S., Hogg, M.A., and Turner, J.C. (1990): 'Knowing what to think by knowing who you are: self-categorization and the nature of norm formation, conformity and group polarization'. *British Journal of Social Psychology*, 29, 97-119.

Asch, S.E. (1952): *Social psychology*, Englewood Cliffs, NJ, Prentice-Hall.

Davison, P.W. (1983): 'The third-person effect in communication'. *Public Opinion Quarterly* 47:1-15.

Deutsch, M. and Gerard, H.B. (1955): 'A study of normative and informational social influences upon individual judgment'. *Journal of Abnormal and Social Psychology*, 51, 629-36.

Doherty, K.T. (1998): 'A mind of her own: Effects of need for closure and gender on reactions to nonconformity'. *Sex Roles*, 38, 801-19.

Festinger, L. (1954): 'A theory of social comparison processes'. *Human Relations*, 7, 117-40.

Glynn, C.J. (1989): 'Perceptions of others' opinion as a component of public opinion'. *Social Science Research* 18:53-69.

Glynn, C.J. (1996): 'Public opinion as a normative opinion process'. In Burleson, B.R. (ed.) *Communication Yearbook 20*. Thousand Oaks, CA, Sage, pp. 157-83.

Glynn C.J., Herbst, S., O'Keefe, G.J. and Shapiro, R.Y. (1999): *Public Opinion*. Boulder, CO, Westview Press.

Hogg, M.A. and Mullin, B. (1999): 'Joining groups to reduce uncertainty: subjective uncertainty reduction and group identification'. In Abrams, D and Hogg, M.A. (eds.) *Social identity and social cognition*. Malden, MA, Blackwell publisher, pp. 249-279.

Kelman, H.C. (1961): 'processes of attitude change'. *Public Opinion Quarterly*, 25, 57-78.

McGarty, C., Turner, J.C., Oakes, P.J., and Haslam, S.A. (1993): 'The creation of uncertainty in the influence process: The roles of stimulus information and disagreement with similar others'. *European Journal of Social Psychology*, 23, 17-38.

Nail, P.R. (1986): 'Toward an integration of some models and theories of social response'. *Psychological Bulletin*, 83, 603-27.

Noelle-Neumann, E. (1974): 'The spiral of silence: a theory of public opinion'. *Journal of communication* 24(2):43-51.

Noelle-Neumann, E. (1984): *The spiral of silence: Public opinion – Our social skin*. Chicago, University of Chicago Press.

Oakes, P.J., Turner, J.C., and Haslam, S.A. (1991): 'Perceiving people as group members: The role of fit in the salience of social categorization'. *British Journal of Social Psychology, 30*, 125-44.

Ross, L., Greene, D., and House, P. (1977): 'The "false consensus effect" An egoncentric bias in social perception and attribution processes'. *Journal of Experimental and social Psychology* 13:279-301.

Ross, M., and Conway, M. (1986): 'Remembering one's own past: The construction of personal histories'. In Richard, M .S., and Higgis, E.T. (Eds.) *Handbook of Motivation and cognition: Foundations of social behavior. Vol. 1.* New York, Guilford, pp. 122-44.

Salmon, C.T., and Kline, F.G. (1984): 'The spiral of silence then years later'. In Sanders, K.R., Kaid, L.L., and Nimmo, D. (Eds.) *Political Communication Yearbook*. Carbondale, IL, Southern Illinois University Press, pp. 3-30.

Shaw, M.E. (1976): *Group Dynamics*. New Delhi, India: Tata McGraw-Hill.

Sherif, M. (1936): *The psychology of social norms*. New York, Octagon.

Tiedens L.Z. and Linton, S. (2001): 'Judgment under emotional certainty and uncertainty: the effects of specific emotions on information processing'. *Journal of Personality and Social Psychology*, 81, 973-88.

Tedeschi, J.T., Schlenker, G.R., and Bonoma, T.V. (1971). 'Cognitive dissonance: private ratiocination or public spectacle'. *American Psychologist*, 26, 685-95.

Turner, J.C. (1982): 'toward a cognitive redefinition of the social group'. In Tajfel. H. (Ed.), *Social identity and intergroup behavior*. Cambridge, England, Cambridge University Press. pp. 15-40.

Turner, J.C. (1985): 'Social categorization and the self-concept: A social cognitive theory of group behavior'. In Lawler, E.J. (Ed.) *Advances in group processes. Vol. 2*. Greenwich, CT, JAI Press, pp. 77-121.

Turner, J.C. (1991): *Social Influence*. Milton Keynes: Open University Press.

Van Knippenberg, A., van Twuyver, M., and Pepels, J. (1994): 'Factors affecting social categorization processes in memory.' *British Journal of Social Psychology*, 33, 419-32.

Weary, G. (1990): 'Depression and sensitivity to social information'. In Moore, B.S. and Isen, A.M. (Eds.), *Affect and social behavior*. Cambridge, England, Cambridge University Press, pp.207-30.

Wheeler, L. and Koestner, R. (1984): 'Performance evaluation: On choosing to know the related attributes of others when we know their performance'. *Journal of Experimental Social Psychology*, 20, 263-71.

Wheeler, L., Koestner, R., and Driver, R.E. (1982): 'Related attributes in the choice of comparison others: It's there, but it isn't all there is'. *Journal of Experimental Social Psychology*, 18, 489-500.

CONSTRUCTING THEORY FOR COMPLEX SYSTEMS

By Dominic L. Lasorsa
CMA 6.144
Journalism School
University of Texas
Austin, TX 78712

March 23, 2002

(512) 471-1966
FAX: (512) 471-7979
lasorsa@mail.utexas.edu

Paper submitted to the Communication Theory and Methodology Division of the Association for Education in Journalism and Mass Communication for presentation at its annual conference in 2002. The author is an associate professor of journalism at the University of Texas at Austin. He thanks Jim Tankard of the University of Texas at Austin and Pam Shoemaker of Syracuse University for helpful comments.

Abstract

CONSTRUCTING THEORY FOR COMPLEX SYSTEMS

A strategy is proposed for building theory relating four or more variables. The approach extends to such complex systems strategies promoted by Hage, Lazarsfeld and Tankard. The paper discusses reasons for exploring multivariate relationships, forms for expressing four-variable theoretical statements, ways to visualize multivariate relationships, ordering multiple variables in time, analyzing causal paths among multiple variables; specifying non-linear relationships and non-additive effects, and useful modifications to the linear, curvilinear and power relationships. This strategy is proposed as an efficient way to advance theory in the social sciences.

CONSTRUCTING THEORY FOR COMPLEX SYSTEMS

Theory builders in the social sciences often are placed in the awkward position of knowing, on the one hand, that their theorizing may be too simple to reflect reality accurately and, on the other hand, that their theorizing may be too complicated to allow realistic investigations. Faced with this dilemma – the complexity of human activity and the limitation of human minds -- the theory builder faces difficult choices. The suggestion is often made that the theory builder start simply and then add complexity as the need warrants. The problem arises when one fails to recognize when things have become too complex. This is the point at which the value of a well-articulated theoretical statement fully shines.

This paper considers why the theory builder might want to use more than three variables in a hypothesis and how to construct theoretical statements relating four or more variables. The paper builds upon three well-developed strategies for constructing theory. The first is a strategy promoted by Hage (1972). Hage's discussion dealt almost entirely with theory relating two variables. The second is a strategy promoted by Lazarsfeld (1955). Lazarsfeld's work dealt almost entirely with theory relating three variables. The third is a strategy promoted by Tankard (1994). Tankard's work, which also dealt almost entirely with three-variable relationships, focused on ways to visualize such relationships. The goal of this paper is to advance these pioneering works on theory construction by extending their ideas to theories relating four or more variables. For the sake of convenience, we refer to these here as "complex systems." The paper suggests how to express such multivariate relationships in hypothesis form and how to think about theoretical and operational linkages when dealing with the multivariate relationships of such complex systems.

In building theory, the importance of a well-expressed theoretical statement cannot be over-emphasized. If formulated properly, theoretical statements help the theory builder stay focused on the task at hand. An added benefit is that clear theoretical statements help communicate to others what one is attempting to do. Even in the simplest of cases, the study of how one concept is related to one other concept, can be sidetracked by a poorly conceived theoretical statement. The addition of just one more concept to our theory will significantly increase the complexity of our work, making it all the more important to produce statements that help us to be clear about what we are doing and to communicate that clearly to others.

A problem with previous treatments of theory building has been the tendency to deal with the simplest case and then to suggest that more complicated cases are mere extensions that are not much more than trivial. After presenting his two-variable strategy, Hage (1972, p. 109) said, "Through our discussion we have been concentrating on the problem of interrelating just two variables. In practice, we can and do expect our operational linkages to be more complex than this. The diagrams and forms refer to the effect of X on some Y where X can be a combination of variables."

Likewise, in presenting his three-variable strategy, Lazarsfeld (1955, p. 120) added parenthetically: "(To simplify the discussion, this analysis is restricted to three variables; if more than three variables are linked together, nothing changes basically, as can be shown fairly easily. We also restrict ourselves to dichotomies. If variables were introduced with three or more steps--for instance, young, middle-aged, and old people--the discussion would only become somewhat more complicated, but not take a different form.)"

What Hage and Lazarsfeld said is technically true. The complications they mention do not change the basic form of an analysis. However, as we shall see, treating an independent variable in a theoretical statement as a set of variables as opposed to just one, or adding a fourth variable to a theoretical statement, or accounting in a theoretical statement for an increase in the values that a variable might take are all more easily said than done. There may be good reasons for wanting to do these things. The question is, "How do we do it?"

Reasons for exploring relationships among three or more variables

Of the four major reasons for introducing a third variable into one's study, the most common reason has more to do with theory destruction than theory construction. When a relationship has been found between two variables, it is a routine practice to test whether some third variable may be responsible for the original relationship. For example, if we find a relationship between TV viewing and crime fear, we should consider other possible alternative explanations for the finding. For example, we might examine whether education affects both TV viewing and crime fear. Perhaps when we control for education we will find that the original relationship disappears. If the third variable accounts for the original relationship then the original relationship is deemed to be spurious. On the other hand, our confidence in the original relationship increases when we control for possible alternative explanations and find that the original relationship still holds. Here, the third variable is referred to as a "control variable."

The other three major reasons for introducing a third variable into our equation are not meant to challenge the original relationship but to specify more precisely the nature of the original relationship. In that sense, they have less to do with theory testing and more to do with theory building.

Once we feel confident about the significance of a relationship between two variables, we can build theory by introducing a third variable to identify a condition under which the relationship holds and a condition under which the relationship does not hold. For example, we might find a relationship between newspaper reading and political knowledge, and wonder whether it holds mainly for those without much education. If so, we have found that the original relationship is contingent on education. Here, the third variable represents a "contingent condition."

We might also introduce a third variable that we believe could intervene between the independent and dependent variable and which might help explain the original relationship. For example, we might find a relationship between TV violence and aggression, and wonder about the mechanism within the stimulus that triggers the response. Does TV violence encourage imitation, lead to identification with an aggressor, produce a general state of arousal that induces a physical reaction, disinhibit a viewer so that violence becomes more acceptable? Here an "intervening variable" may help clarify the nature of the relationship between TV violence and aggression.

Finally, we might introduce a third variable to detect the operating component of a more global variable. For example, we might find a relationship between socioeconomic status and political outspokenness, and wonder whether a particular aspect of socioeconomic status, such as education or income, is largely responsible for the effect. Here we are looking for what we might call an "operating component variable."

Formulating theoretical statements for complex systems

Once we have established a good reason for introducing a third variable into our study, the next step is to state explicitly how we think the three variables are related. While two-variable hypotheses are fairly easy to put into words, three-variable hypotheses are often so complex that they are difficult to express. Generally, when introducing a third variable into our equation, we need to state the expected relationship between the first two variables for each state of the third variable.

Suppose that a relationship between two concepts has been proposed, tested and judged significant. McCombs and Shaw (1972), for example, proposed and began to demonstrate that the press agenda--the set of political issues the news media cover most assiduously--affects the public agenda--the set of political issues the public considers most important. As the press agenda changes, they said, the pubic agenda follows. Here we have a theoretical statement causally linking two variables. The hunch here is that the public agenda depends on the press agenda.

Additional studies presented problems, however. While some studies found media agenda setting effects, others did not. Efforts to reconcile the conflicting findings met with some success when Zucker (1978) suggested that media agenda setting would depend on how much a particular political issue intruded into the public's everyday life. For issues like inflation, he said, the public does not need guidance from the media to know that it is or is not an important concern. Trips to the grocery store and the gas station tell us that prices are stable or not. Therefore, the media do not affect the public agenda much when it comes to "obtrusive issues." However, for issues with which the public has little direct experience, such as a foreign conflict, the media are likely to have an agenda-setting effect. Zucker's introduction of a critical third variable into the agenda-setting equation--issue obtrusivenesss--thus helped advance our understanding of agenda-setting processes and effects.

Here, issue obtrusiveness becomes a contingent condition in the agenda-setting process. How might we state the hypothesis that expresses the expected relationships among the three variables? Here is one such theoretical statement: *Press coverage of obtrusive political issues has no effect on the issue salience of the public; however, the greater the press coverage of an unobtrusive political issue, the more salient that issue becomes to the public, whereas the lesser the press coverage of an unobtrusive political issue, the less salient that issue becomes to the public.*

Notice that this theoretical statement addresses all of the possible conditions of each of the three variables. Again, the general procedure for introducing a third concept into a simpler model of social life is to state the hypothesized relationship between the independent variable (e.g., the press agenda) and the dependent variable (the public agenda) for each value of the third variable (issue obtrusiveness), and then to look for any changes produced.

Compared to some other scientific fields, however, communication research has been rather slow in developing this procedure for building theory. What might be called a "paradigm shift" occurred in communication research in the last quarter of the 20th Century. The word "paradigm" is often used to refer to the general way of doing things at any one time within a scientific discipline. A paradigm shifts when enough scientists working within that discipline recognize that the way they have been doing things is inadequate for dealing with the complexities they want to study, and a new set of norms emerges to displace the old one (Kuhn, 1970). Thus, in the middle of the second half of 20th Century, many communication scholars began to move beyond the study of so-called "main effects" to the study of so-called "conditional effects." Instead of studying merely the effect of an independent variable on a dependent variable, they began to study routinely the effect of third variables on the original main relationship (Roberts and Maccoby, 1985).

However, building theory is not and has never been a matter of simply shoveling more variables into studies. At about the same time that communication research was discovering the need to study conditional variables, the more established discipline of social psychology, which had been fascinated by intervening processes and other conditional effects for years (Chaffee, 1977), was undergoing a paradigm shift of its own. In that older, more developed discipline, scholars were beginning to question seriously the simple linear process model altogether, arguing that both the cognitive system and the social system are inadequately described as a sequential chain of cause and effect. As McGuire (1973, p. 37) put it, "simple *a*-affects-*b* hypotheses fail to catch the complexities of parallel processing, bidirectional causality, and reverberating feedback that characterize both cognitive and social organizations. The simple sequential model had its uses, but these have been largely exploited in past progress, and we must now deal with the complexities of systems in order to continue the progress on a new level."

Suppose we have a theory that relates six concepts. If we consider all the possible bivariate combinations among these six variables then there are 15 theoretical statements that can be made. if we think time order matters, as we often do, then there are 30. Fortunately, not all of these will be equally probable. As Hage (1972, p. 56) observed, perhaps "theory begins when we say some combinations do not occur."

With the introduction of each new concept, the theory builder should state the expected relationship between the independent variable and the dependent variable for each condition of the new variable. If our ideas are good, we will be able to articulate a theoretical statement that captures them. If our ideas are faulty, this exercise will expose them. Either way, we have made progress.

While a theoretical statement expressing a three-variable hypothesis is considerably longer and more complex than is a theoretical statement expressing a two-variable hypothesis, when we move to a four-variable hypothesis the complexity and length become even greater. What might such a theoretical statement look like? Consider Hovland's careful and systematic work on attitude change (Hovland, Lumsdaine and Sheffield, 1949; Hovland, Janis and Kelley, 1953). A number of his experiments examined whether a one-sided or a two-sided message would be more effective. A one-sided message includes only favorable arguments whereas a two-sided message includes the opposition's arguments, which are then refuted. Hovland wondered whether the relative effectiveness of a one- or two-sided message might depend upon two important audience factors--education and initial favorability toward the message. He thought that the more highly educated audience members, as well as those initially opposed to the message, might respond better to a two-sided message because they would be more likely to be aware of and to think about the counter-arguments. Here, we have four variables: (1) the nature of the message, in terms of it being either one-sided or two-sided; (2) the amount of attitude change, in terms of movement closer to or away from the targeted message; (3) the audience's education level, whether relatively high or low, and (4) the audience's initial position, whether initially favorable or initially opposed to the target message. How might we state the proposed relationships among these four variables? Here is a theoretical statement that adequately captures this four-variable hypothesis: *When audience members are high in education and initially opposed, a two-sided message will lead to more attitude change than a one-sided message, but when audience members are low in education and initially favorable, a two-sided message will lead to less attitude change than a one-sided message, and when audience members are either high in education and initially favorable or low in education and initially opposed, a two-sided message will lead to about the same attitude change as will a one-sided message.*

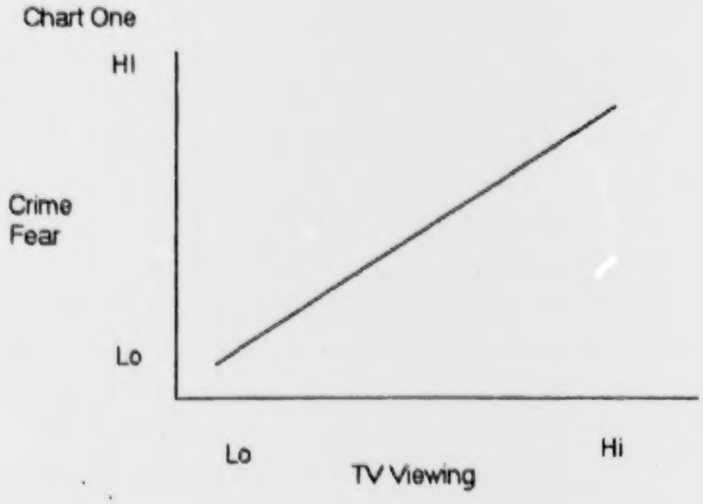
By producing a comprehensive theoretical statement, one that "covers all the bases," we are indicating that we have a clear understanding of how we think these variables are related. Note, for example, that the theoretical statement implies that the two audience factors of education and initial favorability are independent, that is, that they are not related to each other. Furthermore, it implies that their effects on attitude change are relatively equal and can thus cancel each other out. If we were unable or unwilling to make such assumptions, the theoretical statement would be even more complicated.

Visualizing multivariate relationships

At this point, the value of a graphic presentation of our ideas becomes clear. Such a representation can help us understand and communicate more easily the possible outcomes of the observations we would make to test our theoretical statements. We should face it: four-variable relationships *are* going to be hard to understand, at least at first, until we become thoroughly familiar with them. One way to make them less foreboding is to sketch the possible outcomes graphically. While bar charts and other graphic representations may be useful, perhaps the easiest illustrative technique to use is the line graph, for it can show us very clearly and simply how three, four and even more variables are related. Tankard (1994) showed how the theory builder can effectively use line charts to describe clearly the possible results of theoretical statements relating three variables. Here, we show how to extend that practice to more complicated systems.

Suppose we are interested in exploring the relationship between television viewing and crime fear, as Gerbner and Gross (1976) did in their cultivation theory. We can begin by roughly dividing subjects into two categories, based on the dependent variable. Thus, we could separate those with relatively high crime fears from those with relatively low crime fears. We can do this in a number of ways but one common approach is to calculate the mean level of crime fear and to put those with higher levels into one group and the rest into the other group. We then can go through the same process for the primary independent variable, amount of television viewing, creating two categories of relatively light and heavy viewers. Using the standard format of plotting the dependent variable on the Y axis and the primary independent variable X on the X axis, we can see the effect of X on Y clearly.

Suppose that in the group of light TV viewers, 67 percent have a relatively low fear of crime and 33 percent have a high fear of crime and that in the group of relatively heavy TV viewers, 25 percent have a relatively low fear of crime and 75 percent have a relatively high fear of crime. A line chart showing the relationship between these two variables might look something like this:



Because the line from low to high levels of crime fear is not parallel to the X axis but is slanted, it shows that there is indeed a relationship between these two variables.

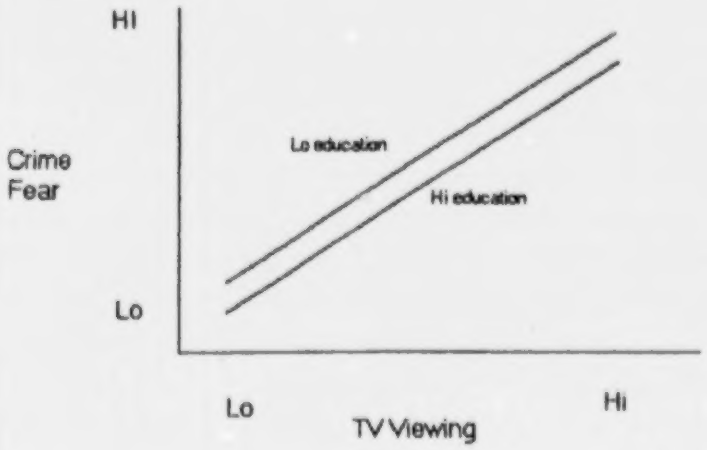
Of course, just because we have observed a relationship between two variables does not mean that one necessarily causes the other. For one thing, what we think is the cause may in fact be the effect (that is, reverse causality). In other words, how can we be sure that crime fear leads to TV viewing, rather than the other way around? To do that, we should demonstrate that the presumed independent variable (TV viewing) precedes the presumed dependent variable (crime fear) in time. Furthermore, even after we have established the correct time ordering of the variables, how can we be sure that there is not some other factor that is causing both TV viewing and crime fear? We may never be sure of this but we can try our best to eliminate all of the possible factors that come to mind. By eliminating these alternative explanations, we strengthen our original argument.

For example, is it not at least feasible that education might drive both TV viewing and crime fear? Perhaps those with high education watch less television and also have less fear of crime. To test this challenge to cultivation theory, Gerbner and Gross examined the effect of this "third variable" of education (as well as others, such as income) on the original relationship they found between TV viewing and crime fear.

To examine the effect of a third variable, we can subdivide the sample once more into those with relatively low levels of the third variable and those with relatively high levels. Then we examine how these two lines are related and that tells us how the third variable is related to the original two variables. There are four possibilities.

First, we might find that the two lines closely resemble the one line we saw in the original two-variable case, that is, the two lines, one representing high levels of the third variable and the other representing low levels, incline in the same direction and at roughly the same angle, running basically parallel to each other. Furthermore, let's say the two lines are relatively close together. The line chart showing this relationship among these three variables might look something like this:

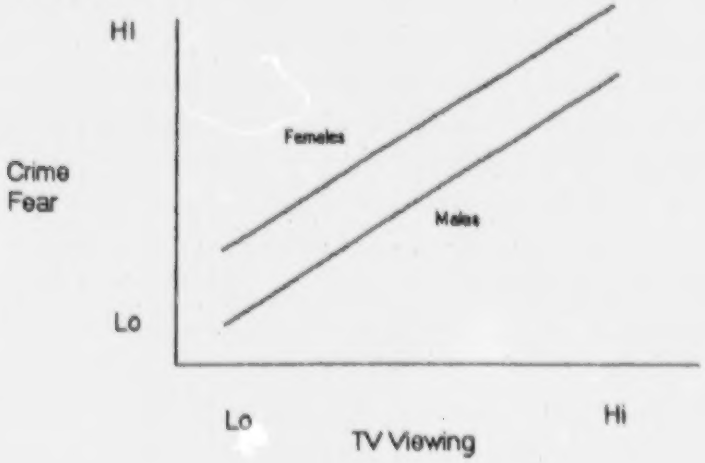
Chart Two



Because the two lines maintain roughly the same angle, because they are parallel to each other (or nearly so) and because they are relatively close to each other, that tells us that that the original relationship between viewing and fear holds and that education does not play a major role. (Note the use of the words "roughly," "nearly" and "relatively." This technique of "eyeballing" line charts is not being used here to test the significance of a relationship or to measure an association but merely as an aid--albeit, an important one--in building theory.) When we find a pattern similar to the one described here, we have a case of what is called "internal replication" because the original relationship between the independent variable, TV viewing, and the dependent variable, crime fear, has been replicated, even after we account for the possible effect of education.

A second possibility is that the two lines still form an incline and are still roughly parallel to each other but that there is a relatively large gap between the two lines. In other words, this line chart looks very much like the previous one except that in the earlier case the two lines were close to each other and in this case they are not. Let's assume the third variable here is gender. The line chart showing the relationship among these three variables might look something like this:

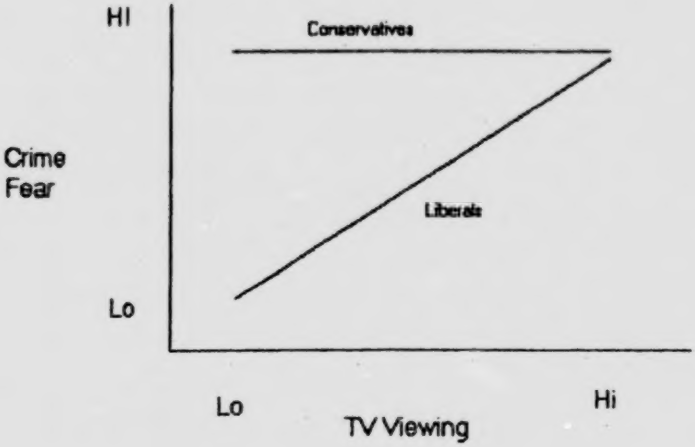
Chart Three



As in the first case, the two lines maintain roughly the same angle as the line in the original two-variable chart and they also are parallel to each other but there is one important difference. Here, there is a considerable gap between the two lines. This tells us that the original relationship continues to hold, that is, that viewing and fear are related, but that gender has an effect, as well. The larger the gap between the two parallel lines, the greater the effect of the third variable. This is what Tankard (1994) referred to as "additivity." Each independent variable adds to the effect on the dependent variable.

Thirdly, we could find that the two lines are no longer roughly parallel to each other, that is, that they are closer together at one end and further apart at the other end. Let's assume we control for political ideology. The line chart showing this relationship among these three variables might look something like this:

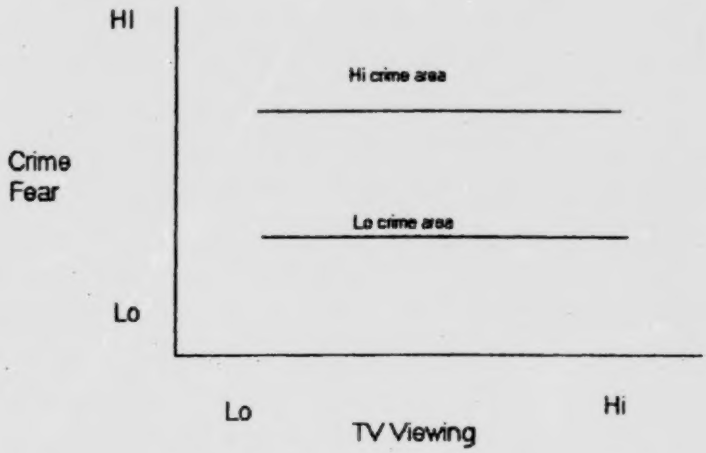
Chart Four



The lack of parallelism between the two lines tells us that there is an interaction between the third variable and the other two variables. In the example, the original relationship between viewing and fear holds for liberals but it disappears for conservatives. This is referred to as an "interaction."

Finally, there is a fourth possibility. After we control for a third variable the two lines representing the relationships among the three variables are now roughly parallel to each other and also roughly parallel to the X axis. A pattern like this has two possible meanings, depending upon how the theory builder imagines the three variables to be arranged in order of time, or causally. Let's assume the third variable we are controlling for is neighborhood crime. The line chart showing this relationship among these three variables might look something like this:

Chart Five



Because both lines are parallel to the X axis, that tells us that the original relationship has disappeared and that the relationship between viewing and fear can be explained away by considering neighborhood crime. This is what is referred to as either "explanation" or "interpretation." Which of the two it is depends on how we think the three variables are time-ordered or causally related. If we think the third variable occurs first in time, before the independent variable, then it is a case of explanation. If we are willing to assume here that it is more likely that neighborhood crime might lead to TV viewing, rather than vice versa, then this would be an example of explanation.

Suppose, on the other hand, that we get exactly the same pattern in our line chart but that the control variable is lethargy. If we believe that television viewing leads to lethargy, rather than the other way around, then this would be an example of what we refer to as interpretation. (We will elaborate further on this question of explanation versus interpretation shortly.)

In summary, we can often look at a line chart showing the relationships among three variables and quickly tell what's going on:

(1) Two parallel lines mean there is no interaction taking place whereas two non-parallel lines mean there is an interaction.

(2) Two close together parallel lines mean the third variable has no effect on the original relationship whereas two parallel lines not close together means that the third variable adds to the explanation or prediction.

(3) Finally, two parallel lines that are parallel also to the X axis mean that the original relationship is explained away by the control variable, either in a case of explanation or interpretation, depending on the presumed or known causal ordering or time ordering of the variables.

(Note that the case of two close-together parallel lines that are parallel to the X axis will not occur because this presumes a case where the original variables were not found to be related in the first place.)

Extending the three-variable strategy to complex systems

Now we are ready to extend our analysis to the addition of a fourth variable. Let's assume that we have controlled for every conceivable third variable than we can think of and for which we have measures, and we have found that the relationship between TV viewing and crime fear holds except that (a) neighborhood crime appears to contribute to crime fear, independently of TV viewing (thus, a case of additivity) and (b) the relationship between viewing and crime fear appears to depend on gender (thus, a case of interaction). Line charts graphically illustrating each of these relationships might look something like this:

Chart Six

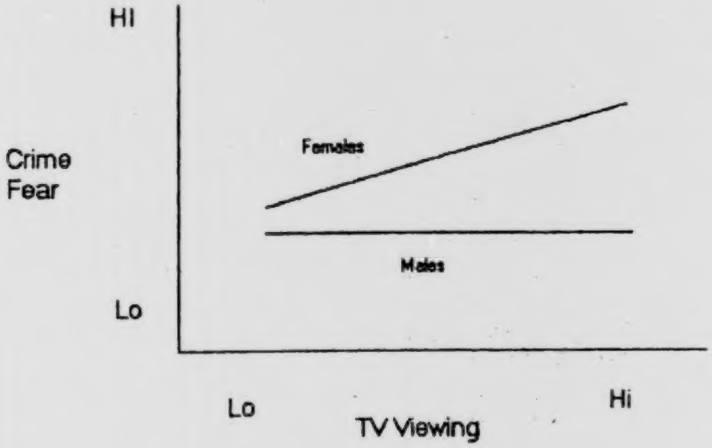
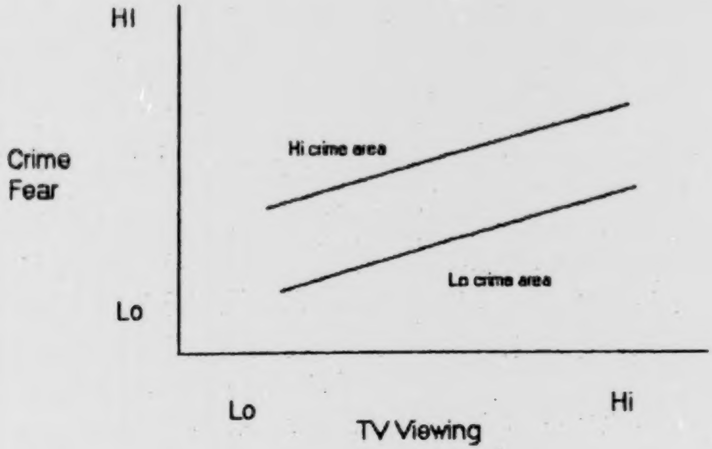
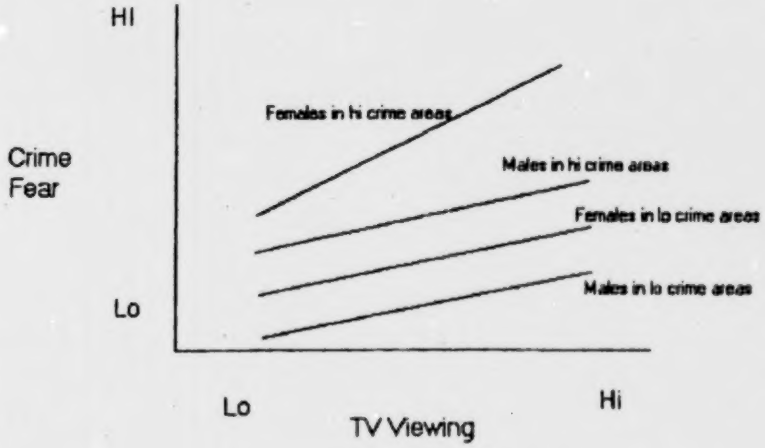


Chart Seven



Suppose further that we do not have any good reason to expect that level of neighborhood crime is related to gender. In other words, we expect there to be roughly as many women living in high-crime neighborhoods as there are women in low-crime neighborhoods. We could examine U.S. Census Bureau, Justice Department or other relevant data to confirm or deny this expectation. If we are correct in our assumption then our line chart might look something like this:

Chart Eight



Notice that instead of two lines to compare, as in the case of the three-variable relationships, we now have four lines. Notice also, however, that the simplicity of meaning attached to the three-variable charts is lost when we add just one new variable to our equation. Even in this simplest of cases, where we are not suggesting any relationship between the two control variables, the patterns we encountered earlier and their simple interpretations break down. The interaction contributed by age interferes with the additivity contributed by neighborhood crime so that the additivity becomes obscured by the interaction. In one sense the interaction "overrides" the additivity so that what is in reality a case of additivity becomes confounded by the interaction created by gender, even though gender and neighborhood crime are not related to each other.

This example points out how important it is to look at bivariate relationships *separately* before examining trivariate relationships and to examine trivariate relationships *separately* before moving on to even more complicated multivariate relationships. The point we are taking pains to make here is how crucial it is that we understand these simpler relationships before we attempt to add new variables to the equation.

This example also leads to a second important point. Notice that if we were to attempt to add a fifth variable to the equation that the number of lines necessary to represent such a model would be twice the number in the previous case. Let's assume, for example, that we had reason to believe that political ideology contributes to our explanation or prediction. Therefore, besides males in low crime areas, females in low crime areas, males in high crime areas and females in high crime areas, we would have four additional lines representing each of these conditions for both liberals and conservatives. Furthermore, were we to attempt to add a third value to that new variable (political moderates), the result would be four more lines. Clearly, the line chart will quickly become too complicated to serve its purpose.

If we keep the above caveats in mind, we can use line charts to help us keep track of what we are doing and to imagine what the results of empirical tests of our hypotheses might look like.

The approach we have taken here closely corresponds to logical extensions of the basic cross-tabulation of two, three and four variables. Indeed, it is possible to add additional control variables, as well as additional categories (values) of the variables, to produce contingency tables of even larger sizes. Computer packages make such efforts easy. Once we have mastered these techniques we can begin to consider carefully other important issues such as how strongly any two of the variables are related to each other (measures of association) and the probability that the observed relationship could have happened by chance (tests of statistical significance). Statistics texts offer guidance on which particular measures and tests are appropriate for different levels of measurement of the variables studied.

Ordering multiple variables in time

Let us return for a moment to the question of explanation versus interpretation. Again, the line charts cannot tell us which is which. This is because the only difference between explanation and interpretation is our presumption of which variables are causes and which are effects. The line chart can only tell us whether a relationship exists or not (correlation) but it cannot tell us which variables are causes and which are effects. Therefore, the same line chart could show either explanation or interpretation, depending on how we think the variables occur in time. Even when we are dealing with just two variables the questions of time ordering can be critical. Once McCombs and Shaw (1972) showed that the press agenda and the public agendas covaried, their next step was to show that the press agenda leads to the public agenda, and not the other way around (Shaw and McCombs, 1977). As we add more variables to our study, the time-ordering question becomes more important.

This brings us to the next important step in theory building with complex systems. Do we understand the approximate time ordering of the variables? We may not be able to achieve a completely unidirectional flow of causality but for every case in which we establish (or are willing to assume) that variable X is the cause of variable Y, and not vice versa, then we have simplified our task. If we are able to view the relationships among the set of variables as involving only one-way causation then we are able to build a model consisting of what is called a recursive system of equations. This can significantly simplify the task of studying four or more variables simultaneously.

Another useful technique that can take us one step further in our attempt to simplify our work is the "block recursive model," a technique based on the notion that causes and effects in social life can be conceived of as being bundled together (Blalock, 1969). Thus, a "cause" of something may consist of a subset of variables, as may an "effect," and one can then link chains of causes and effects, each of which forms a bivariate block.

Suppose, for example, that we are interested in how news media content happens. We suspect that among the causes are competition from rival media, community standards, and other variables that are *outside* the production system per se, as well as causes located *inside* the production system, such as staff training and organizational routines. Shoemaker and Reese (1996) proposed a comprehensive hierarchy of such causes of news content, grouping together those that pertain to the individual person, the organization, the nation state, and so forth. Hage (1972) suggested that variables can often be generally classed in terms of those that are (a) outside the system, (b) resources or inputs of the system, (c) structures of the system, (d) integration processes of the system, (e) performances of the system and (f) outputs of the system. Groupings of variables such as these will almost always suggest a time-ordering. Later, if the need arises, one can begin to consider feedback issues or other complications, but only after one has a firm grasp of the unidirectional model.

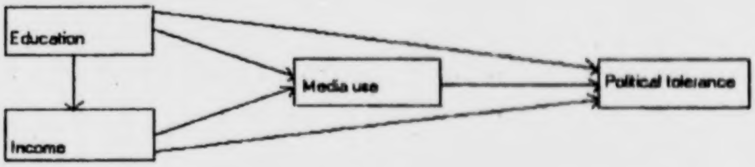
This technique may seem onerous and perhaps even needlessly burdensome but given the difficulty of establishing and understanding how more than three variables might be related, this method can prove to be an extremely valuable tool for theory construction.

Analyzing paths among multiple variables

A technique known as path analysis has become an important tool that enables researchers to explore questions of causation from correlational data. Introduced by Wright (1921) and popularized in the social sciences by Blalock (1964) and Duncan (1966), path analysis has become widely used as a method for inferring time-order relationships from nonexperimental data, such as synchronous (single-wave) surveys. As a result of the development of path analysis and other correlational methods such as cross-lagged correlation, the old argument that one cannot say anything about causation from correlational data is no longer quite true (Chaffee, 1977). Path analysis is now routinely employed as a way to test hypotheses dealing with more than two variables over a sequence of time. However, it can also be a valuable tool for theory construction.

Path analysis is based on the general assumption that two events that hypothetically occur in time close to each other will be more strongly related than two events separated by greater time, intervening events, or both. We start with a causal theory that involves more than two variables occurring at more than one time. For example, suppose we think that variables W, X and Y cause variable Z. There are a number of ways in which the three independent variables might relate to Z and to each other. Suppose we think that variables W, X and Y are interrelated such that W affects X and Y directly, X does not affect W directly, Y does not affect either W or X directly, and all three directly affect Z. To illustrate, we might think that political tolerance (Z) is caused by education (W), income (X) and media use (Y). Furthermore, we might think that education affects income and media use directly, that income does not affect education directly, that media use does not affect either education or income directly, and that education, income and media use all affect political tolerance directly.

The path diagram describing these relationships might look like this:



Such a path model should have a rationale for the linking of each pair of variables, that is, an explanation in words of why it is believed that one variable influences the others. Note that this causal theory is specified first and then path analysis is used to determine if the presumed ordering of these variables is structurally sound. The strength of the direct and indirect influences that each variable has on the other variables that follow it is then estimated using multiple regression. In other words, multiple regression is used here as a descriptive tool. It is used to describe the structure connecting independent and dependent variables and to evaluate the logical consequences of a structural model that has been proposed from some causal theory. It is the theory that specifies how the variables are ordered. Each arrow in the diagram represents a presumed causal linkage or path of causal inference between each pair of variables. The strength of each separate path is then estimated through the use of multiple regression. The estimation will actually involve several regression equations, depending upon the number of variables, and variables that are independent in one equation may be dependent variables in another. For example, here income is a dependent variable for the education-income relationship, media use is a dependent variable for the education-income-media use relationship and, finally, political tolerance is a dependent variable for the entire structure.

One strength of this approach to theory building is that it forces us to think about how the variables in the system are connected. Which variables have a causal influence on which other variables, and which way does the causal influence flow? In drawing a picture of a path model, one is required to think about such questions.

It should be noted, however, that because path analysis utilizes multiple regression to describe the structure among the variables, all of the assumptions of multiple regression still apply, such as the assumptions that the variables are linearly related and that their effects are additive. It is here that the would-be theory builder may get into trouble because the variables may *not* be linearly related and the effects may *not* be additive. As Hage (1972, p. 88) put it, "The difficulty with machine solutions, especially current regression techniques, is that we are likely to remain at the level of adding variables together instead of specifying nonlinear relationships such as curvilinear or power forms."

Before we assume that the bivariate relationship between variables X and Y is linear and that the combined effects of the independent variables are additive, it is therefore a good idea to consider how else the variables might be connected. Since nearly all humans efficiently communicate with words, it makes good sense to discuss verbally how we think the variables are connected or, at least, how they could be connected. Once we have expressed a clear theoretical statement, one that specifies how we think the variables are connected, the next step is to articulate why we think they might be connected in these ways. Why do we think that variable X causes variables Y and Z and why do we think that variable Y causes variable Z? Studies may express how the author thinks each variable is related to the other relevant variables but not why they are related in the specified ways. In such cases, the author is providing operational linkages but not theoretical ones. We need both.

Specifying non-linear relationships and non-additive effects

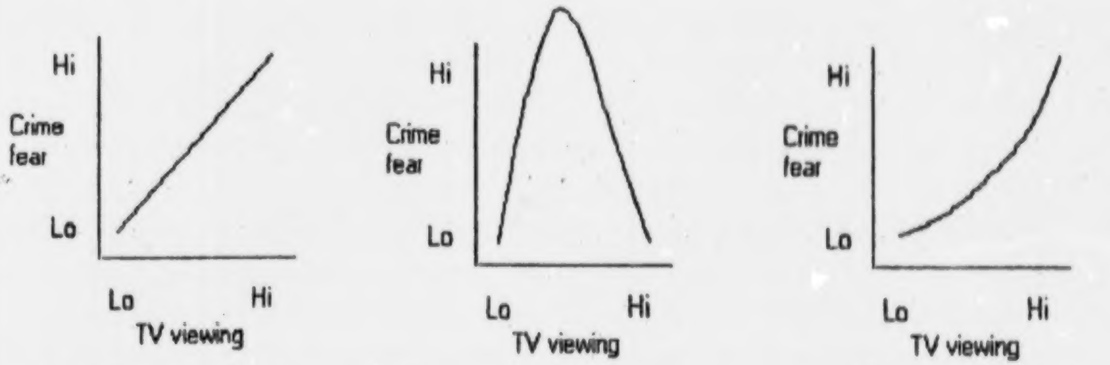
If we are proposing a theory that includes four concepts, we need to define each of these four concepts (i.e., give conceptual definitions), express relationships between and among these concepts (i.e., provide a theoretical statement), describe how we think the four concepts are related (i.e., provide operational linkages) and describe why we think they are related (i.e., provide theoretical linkages). Starting with a basic bivariate relationship, we work our way up, step by step, to the complete four-variable system. For example, if we think television viewing affects crime fear we need to define television watching and crime fear, and state explicitly a theoretical statement, such as, "As the amount of television watching increases, the amount of crime fear increases." We then need to articulate how we think television watching affects crime fear (operational linkages), and why (theoretical linkages). Why do we think television viewing affects crime fear? Suppose we think that television's constant underlying message is that certain groups (e.g., women, minorities, the young, the old, the poor) tend to be victims in a violent, crime-ridden world. We think that television generally makes viewers more fearful of crime than they otherwise would be. We also think that those in particular social groups that are often depicted on television as victims of violence and crime are going to be especially impacted, that is, they will become particularly fearful. These and other ideas underlie Gerbner's theory of cultivation (Gerbner and Gross, 1976).

By articulating not just that television viewing is related to crime fear but how we think television viewing is related to crime fear, we begin to recognize that some of these relationships might not be simply linear and that the effects of some of these variables may not be simply additive. For example, it makes sense to wonder how we think the level of crime fear would be affected by heavy television viewing of a poor minority woman, compared to a rich minority woman. Do we think heavy viewing by segments of society that are constantly depicted on television as victims are exponentially affected if they are in two of the designated groups? What if they are in three of the groups? How do we think rich white men living in low crime areas are affected? Does heavy television viewing *decrease* their crime fears? Why or why not?

Besides linear relationships, two other common ways variables are connected are curvilinear and power forms. If we think the young and the old are disproportionately depicted as victims on television and that as a result of this we think that young and old viewers are particularly affected by television viewing, then we are maintaining that the relationship between age and crime fear is curvilinear. In other words, as age increases, crime fear at first increases, then it decreases, and finally it increases again. Likewise, if we think that crime fear generally increases with increases in television viewing but that for certain groups depicted as victims the effect is especially strong then we might consider the effect to be exponential for members of these groups. This would be a power function.

The three line charts in Chart Nine illustrate a linear, a curvilinear and a power relationship. Before making the assumption that the relationship between variables is linear, the theory builder should take the extra step of considering whether one of these other forms is more plausible. Good theoretical linkages will go a long way toward resolving such a question.

Chart Nine



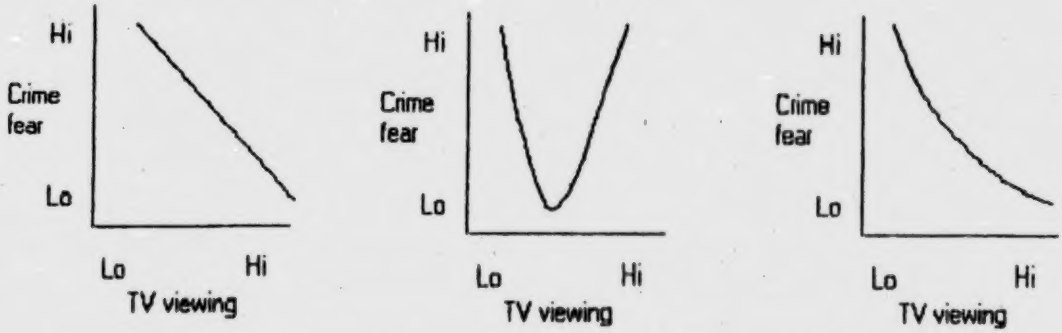
Positive Linear Relation Positive Curvilinear Relation Positive Power Relation

Modifications to the basic relationships

Besides deciding which of these three common forms most closely represents a relationship, we should also consider four possible modifications to these basic forms (Hage, 1972). The first is *direction.* Linear, curvilinear and power relationships can be positive or negative. If we believe that as socioeconomic status increases, crime fear decreases, then we believe the relationship is a negative one.

The following three line charts show the effects of a negative direction on each of the three basic forms of relationships:

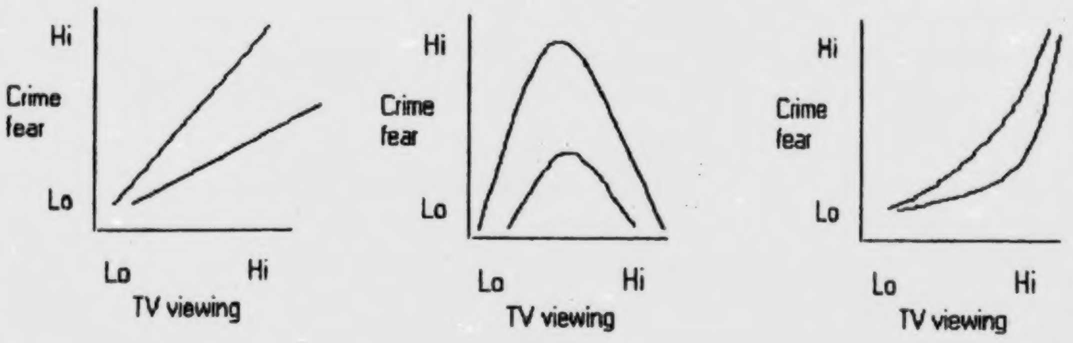
Chart Ten



Negative Linear Relation Negative Curvilinear Relation Negative Power Relation

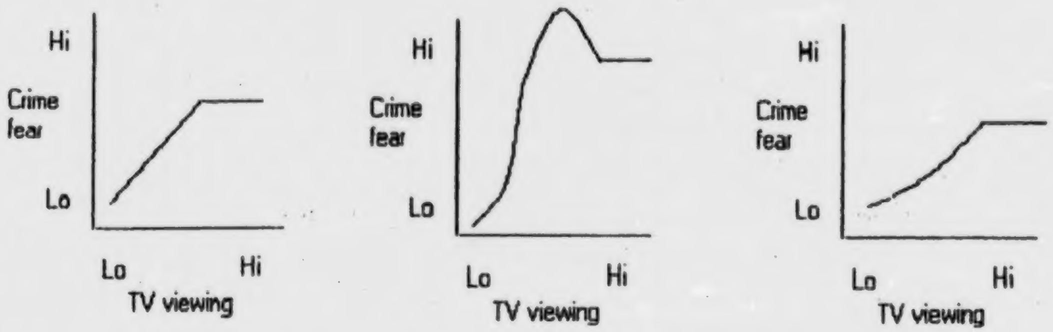
Secondly, we should consider whether we need *coefficients.* A coefficient slightly changes the relationship from a one-to-one ratio to some other ratio. If we think a unit increase in variable X leads to a unit increase in variable Y then we have the form X = Y but if we think a unit increase in X leads to *twice* the amount of change in Y then we add a coefficient to one of the terms. For example, we might think that socioeconomic status is very important to crime fear, such that an increase in it leads to a significantly larger decrease in crime fear, say, twice as much. One way to express this is to assign a coefficient to one of the terms, such as 2X = -Y. Note that a coefficient is not the same as a power. A coefficient changes the slope of a straight line but the line is still straight, not curved, as in a power relationship. This is why we said a coefficient "slightly" changes the relationship; a power form yields a more dramatic effect. It is possible to add coefficients to any of the three basic forms. The following three line charts show the effects of different coefficients on each basic form:

Chart Eleven



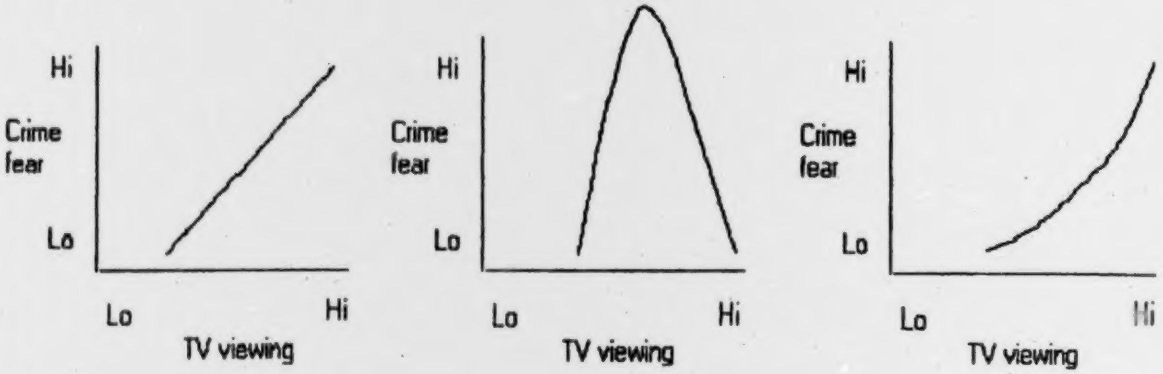
A third possible modification to the basic form of the relationship is the addition of *limits*. We may think that as socioeconomic status increases crime fear decreases but we also may think that at some point the law of diminishing returns sets in. In other words, at some point, an increase in socioeconomic status will have no further effect on crime fear. A saturation point is reached. These line charts show the effects of limits on each of the three basic forms of relationships:

Chart Twelve



Finally, a fourth modification is the addition of *constants.* A constant will move the basic form further along the X axis or the Y axis but it will not change the basic form, direction, slope or limits of the relationship. A constant thereby determines the relationship's "starting point" along either the X or Y axis. These line charts show the effects of a constant on each of the three basic forms of relationships. In this case, the constant has pushed the basic relationship to the right along the X axis:

Chart Thirteen



We should also not ignore the possibility that the form of the relationship that best matches our theoretical statement is a *combination* of more than one of the basic forms. For example, we might add two or more curve functions together to produce a wave that represents cycles of economic growth, or we could combine a curvilinear and a power function that shows cycles that are also geometrical. Another common occurrence is having one variable only affect another after a certain threshold is reached, at which point a plateau occurs, and the impact of X on Y only occurs again when a subsequent threshold is reached. For example, suppose we think that education has an effect on social networking but we do not think the relationship is a simple linear one such that a unit increase in education leads to a unit increase in networking. Education might be measured in terms of years of schooling but we might think that the change from year eight to year nine and the change from year 12 to year 13 produce significantly more change than does the change from year three to year four or from year 13 to year 14. In other words, we regard the change from primary school to high school and the change from high school to college as "milestones" that produce a significantly greater effect on networking than does the change from the third grade to the fourth or from being a college sophomore to being a college junior. This is known as a "step function," which is a basic linear relationship with the addition of incremental limits at certain key points. This variation on the basic linear form is probably more common that many other possible forms of relationships but unless the theory builder considers it as a possibility it is almost certainly going to be overlooked.

Caveats and conclusions

Generally, we always should look for the most parsimonious ways to describe how we think our concepts are connected but we should not ignore the possibility that the relationship is not a simple one. Armed with a good theoretical statement and good theoretical linkages, we can make the task of producing good operational linkages a much less daunting one.

Furthermore, we are addressing here the use of path analysis in theory building and not theory testing. A disadvantage of path models is that they can lead people to think that causal relationships have been demonstrated when in fact they have only been assumed. Unless a path model is tested with data from a panel study or some other source of information with more than one time point, it is not capable of detecting causal direction. Using path analysis to build theory is a form of what is known as the "hypothetico-deductive method." McGuire (1973, p. 41) described this as a "creative procedure ... where one puts together a number of commonsensical principles and derives from their conjunction some interesting predictions, as in the Hull and Hovland mathematico-deductive theory of rote learning, or the work by Simon and his colleagues on logical reasoning."

Computers make it feasible to conduct ambitious simulations that make path analysis a theory building procedure that is both practical and judicious in a wide variety of contexts. However, this use of path analysis contrasts sharply with a theory-free inductive search for the single "best fit" model. Computers also make it feasible to run a large series of tests for many possible models linking a large set of variables. However, such an endeavor is not scientifically sound. A path analysis, like experimentation, should begin with a set of integrated theoretical propositions about the relationships among some variables. These propositions may then be tested as a set with empirical data. That a particular path model fits well with the data does not preclude the possibility that other theoretical models linking the same variables might also accord well with empirical findings. The same, however, is true of an experiment. That an experiment's results support a theory does not preclude the possibility that there is another theory that accounts even better for the findings. This better theory, however, will not be found lurking in data. It must be formulated. In the same way, a good path analysis will not magically emerge from data. It, too, must be formulated.

This paper has attempted to provide the theory builder with sound procedures for advancing theory. While they may at first appear daunting, they can, with a bit of patience and practice, free the theory builder to develop more sophisticated, imaginative and important ideas that more closely resemble the complex social world in which we live. Hage, one of the pioneers in the promotion of these ideas, and to whom we are greatly in debt for much of what we know about theory building in the social sciences, called the suggestions he made for advancing theory "guidelines for our thought processes" (Hage, 1972, p. 109). Armed with these guidelines, the theory builder can go a long way toward making the social world easier to understand and, therefore, a more pleasant world to inhabit.

References

Blalock, H. M., Jr. (1964) *Causal inferences in nonexperimental research.* Chapel Hill, NC: University of North Carolina.

Blalock, H, M., Jr. (1969) *Theory construction: From verbal to mathematical formulations.* Englewood Cliffs, NJ: Prentice-Hall.

Chaffee, S. H. (1977) Mass media effects: New research perspectives. In D. Lerner and L. M. Nelson (Eds.), *Communication research--A half-century appraisal* (pp. 210-241). Honolulu: University Press of Hawaii.

Duncan, O. D. (1966) Path analysis: Sociological examples," *American Journal of Sociology, 72,* 1-16.

Hage, J. (1972) *Techniques and problems of theory construction in sociology.* NY: John Wiley & Sons.

Hovland, C.I., Janis, I.L., & Kelley, H.H. (1953) *Communication and persuasion.* New Haven, CT: Yale University Press.

Hovland, C.I., Lumsdaine, A.A., & Sheffield, F.D. (1949) *Experiments in mass communication.* NY: Wiley.

Gerbner, G., & Gross, L. P. (1976) Living with television: The violence profile. *Journal of Communication 26,* 172-199.

Kuhn, T. S. (1970) *The structure of scientific revolutions,* 2nd ed. Chicago: University of Chicago Press.

Lazarsfeld, P.F. (1955) Interpretation of statistical relations as a research operation. In Lazarsfeld, P.F., & Rosenberg, M. (1955) *The language of social research: A reader in the methodology of social research* (pp. 115-125). Glencoe, IL: The Free Press.

McCombs, M E., & Shaw, D. L. (1972) The agenda-setting function of mass media. *Public Opinion Quarterly, 36,* 176-187.

McGuire, W. (1973) The yin and yang of progress in social psychology: Seven koan. *Journal of Personality and Social Psychology, 26,* 446-456. Reprinted (1976) in L. H. Strickland, F. E. Aboud and K. J. Gergen (Eds.), *Social psychology in transition* (pp. 33-49). NY: Plenum Press.

Shaw, D. L., & McCombs, M. E. (1977) *The emergence of American political issues: The agenda-setting function of the press.* St. Paul, MN: West.

Shoemaker, P. J., & Reese, S. D. (1996) *Mediating the message: Theories of influences on mass media content,* 2nd ed. NY: Longman.

AGENDA SETTING, MEDIA FRAMING, NEWS PRIMING AND STATUS CONFERRAL: A THEORETICAL SYNTHESIS

By Dominic L. Lasorsa
Journalism School
University of Texas
Austin, TX 78712

(512) 471-1966
FAX: (512) 471-7979
lasorsa@mail.utexas.edu

March 26, 2002

Paper submitted to the Communication Theory and Methodology Division of the Association for Education in Journalism and Mass Communication for presentation at its annual conference in Miami Beach, Florida, August 7-10, 2002. The author is an associate professor of journalism at the University of Texas at Austin.

Abstract

AGENDA SETTING, MEDIA FRAMING, NEWS PRIMING AND STATUS CONFERRAL: A THEORETICAL SYNTHESIS

Among mass communication theories that relate to the effects of news coverage on public opinion are agenda setting, media framing, news priming, second-level agenda setting and status conferral. In an effort to clarify the extent to which these five theories are alike and different, consideration is given to their independent and dependent variables, and to the psychological processes that intervene between exposure and effect. It is proposed that the news media have the power to direct attention through the process of framing and the power to sustain that attention through the process of priming and that together these two mass communication processes help explain how variations in content can affect public opinion in a variety of important ways, including the effects of agenda setting, second-level agenda setting, news priming and status conferral.

AGENDA SETTING, MEDIA FRAMING, NEWS PRIMING AND STATUS CONFERRAL: A THEORETICAL SYNTHESIS

Mass communication research has been successful in demonstrating that the mass media affect people in important ways. The standard social scientific model involves measuring or manipulating variation in exposure to media content and then observing change in people's cognitions, affections or actions. This change in the "dependent variable" is considered sufficiently demonstrated when it is linked empirically in a systematic statistical fashion to the variation in the "independent variable." Thus, we might observe that certain variations in the news media's treatment of political issues leads to certain changes in people's thoughts about the importance of these issues, as agenda setting theory holds (McCombs & Shaw, 1972).

However, considerably less success has been achieved in uncovering the psychological mechanisms that intervene between exposure and effect. From the traditional two-variable model, we may understand *what* is happening but unless we consider how these "intervening variables" work, we cannot fully understand *how* it happens. More than a quarter-century ago, Chaffee (1977, p. 222) observed that when it comes to understanding the underlying psychological processes that allow mass communication to take place, "About as many different theories exist regarding these processes as there are theorists." Since then, some progress has been made but areas of mass communication research remain where the problem is acute. One of these areas is the study of the effects of news media coverage on public opinion. Theories in this area, including status conferral (Lazarsfeld and Merton, 1948), agenda setting (McCombs and

Shaw, 1972), second-level agenda setting (McCombs and Estrada (1997), news priming (Iyengar and Kinder, 1987) and media framing (Entman, 1993) have been relatively successful in demonstrating that the independent variable influences the dependent variable. However, they have not been as successful in explaining how the various effects are achieved, that is, they have not convincingly established the intervening psychological processes through which the hypothesized effects occur.

This is a serious deficiency responsible for considerable confusion in the literature, with theorists debating the extent to which the theories are alike and different, some arguing that they are essentially the same, others arguing that they differ in important ways. Such debates are not likely to end until we have arrived at a clear understanding not only of how the independent and dependent variables are alike and different but also how the underlying psychological processes connecting these variables are alike and different.

Thus, the goal of this paper is to compare these theories not only in terms of their independent and dependent variables but also in terms of the psychological processes that intervene between exposure and effect. Such an analysis, it is hoped, will help resolve some of the problems, confusions and debates surrounding these theories and their theoretical domains. The five theories are first briefly described and commonalties noted. Major arguments for and against subsuming the theories are then identified and evaluated. This leads to a consideration of how the general psychological principles of framing and priming can be used to help arrive at a more integrated approach to the study of news media effects on public opinion. The paper ends with suggestions for theory building in this important area of mass communication research.

Brief descriptions of the five theories

For convenience sake, we begin with brief definitions of each of the five theories to be considered here, taken from Severin and Tankard (2001), a textbook widely used in introductory mass communication theory classes. Status conferral, the earliest of the theories, refers to the idea that the media anoint persons or groups merely by mentioning them.

Status conferral. "Status conferral, or recognition by the mass media, indicates that one is important enough to single out from the mass and that one's behavior and opinions are significant enough to demand media attention. By legitimating the status of individuals and groups, the media confer status and prestige" (Severin and Tankard, 2001, p. 327). Thus, media coverage of a politician, actor or scientist signals that the person is noteworthy. Since status conferral was not advanced as a theory per se, we may be giving it too much status by labeling it a theory. Nevertheless, it is regarded as an important function of the mass media, on a par with the other functions discussed here, and its similarities to the other theories make it worth including in the analysis.

Agenda setting. Agenda setting is "the media's capability, through repeated news coverage, of raising the importance of an issue in the public's mind" (Severin and Tankard, 2001, p. 240). Thus, if the news media heavily cover the risk of household mold then that issue becomes more important to the public. Later, if the risk of workplace asbestos rises to the top of the "media agenda," and the risk of household mold is demoted, then these changes come to be reflected in the "public's agenda."

News priming. News priming is "the process in which the media attend to some issues and not others and thereby alter the standards by which people evaluate election candidates," political leaders or other complex political objects (Severin and Tankard, 2001, p. 241). Thus, if the media focus upon foreign affairs issues at the expense of domestic affairs then the public comes to evaluate the president more in terms of the president's performance in foreign policy matters.

Media framing. Media framing refers to "how an event is packaged and presented in the media" (Severin and Tankard, 2001, p. 15). A media frame is a "central organizing idea for news content that supplies a context and suggests what the issue is through the use of selection, emphasis, exclusion, and elaboration" (p. 277). The theory holds that "media framing can have an effect on the way audience members end up interpreting an issue" (p. 279). Thus, if the media define an overseas civil conflict in terms of a Communist threat rather than, say, as an internal economic struggle, then the public comes to perceive the conflict that way.

Second-level agenda setting. Second-level agenda setting "builds upon the idea that an agenda is an abstract notion and that many things other than issues could be items on the list" (Severin and Tankard, 2000, p. 241). Thus, the attributes of election candidates, such as personality, integrity, appearance, intelligence and speaking ability, form an agenda. Those attributes that the media focus upon then become those the public thinks are most important, and that can affect, in turn, how one evaluates and responds to the candidates.

These brief descriptions and examples do not do justice to the complexities of any of these five theories but they at least provide a starting point from which we can advance. Even these crude descriptions indicate that there are similarities among these theories. All deal in some way with how variation in news media content affects some aspect of public opinion. Some of the theories share the same independent or dependent variables, and some appear to share both. Furthermore, it can be seen that each of these theories deals in some way with how the news media direct the audience's attention toward and away from particular political objects.

The attention-focusing power of the media

If one reads a bit further into Cohen's (1963, p. 13) well-known quote that has become something of a motto for agenda setting, it explicitly makes a connection to attention: "The press...may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think *about*.... The editor may believe he is only printing things that people want to read, but he is thereby putting a claim on their attention, powerfully determining what they will be thinking about, and talking about, until the next wave laps their shore."

News priming, said Glynn, Herbst, O'Keefe and Shapiro (1999, p. 390), involves "drawing greater attention to some aspects of an issue at the expense of others." Kinder (1998, p. 823) said of news priming, "by paying attention to some problems while ignoring others, network news programs set the terms by which political judgments are rendered and political choices made."

In explaining Lang and Lang's (1983) model of the process through which important political issues are determined, Severin and Tankard (2001, p. 230) described the second step, which involves media framing, this way: "The events and activities in the focus of attention must be 'framed,' or given a field of meanings within which they can be understood. Watergate was originally framed as a partisan issue in an election campaign, and this made it difficult for it to be perceived in a different frame--as a symptom of widespread political corruption."

Finally, as already noted, Severin and Tankard (2001, p. 327) noted that status conferral "indicates that... one's behavior and opinions are significant enough to demand media attention."

Thus, we can see that these five mass communication theories which share either independent or dependent variables also involve an intervening psychological process that has something to do with the focusing of attention. However, that is not enough. A more careful explication is needed for, as Reeves, Thorson and Schleuder (1986, p. 251) pointed out, "Psychologists wince when reminded of William James' (1890) dictum, 'Everyone knows what attention is'." In order to understand how these theories are alike and different, how they are related to each other and, ultimately, how each one works, we need to do more than simply identify their independent and dependent variables and we need to know more about their underlying psychological processes than simply that they have something to do with directing attention.

Indeed, as Schramm (1973, p. 90) observed, *all* mass communication can be viewed as having something to do with directing attention. As he said, "Media have the power to focus attention, and thus to direct much of the interpersonal discussion within society." Schramm credited Lasswell with first developing this idea. In the remarkably influential paper in which Lasswell (1948, p. 87) presented his communication model ("Who says what in which channel to whom with what effect?"), as well as his discussion of the functions of the press (surveillance, correlation and heritage transmission), Lasswell also described the mass communication process in terms of "sequences in which various senders and receivers are linked with one another. Subject to modification at each relay point in the chain, messages originating with a diplomat or foreign correspondent may pass through editorial desks and eventually reach large audiences." He said we can think of this process as "a series of attention frames," each modified as it passes from one relay point to another in the news gathering chain, so that a far-away event eventually becomes a news story reflecting the interests of its final destination.

However, the media not only have developed ways to *gather* news that will draw the audience's attention, they also have developed ways to *report* news that allow the audience to find quickly that information it will consider most interesting. This aspect of the attention-focusing power of the media is what Tannenbaum (1955) called the "indexing process" of the media. The mass media have developed devices (e.g., newspaper headlines, TV news "lead" stories, magazine picture captions) that help audience members quickly decide where to place their attention. As Tannenbaum (1955, p. 325) said, "A message part serving as an index is one which selectively sensitizes a particular perception of the message by channeling a particular mediating reaction to the top of the hierarchy. To put it another way, the hierarchy may be considered as a set of possible reactions each with a certain probability of occurrence at a given time. An index serves to raise the probability of one of these reactions occurring over all others."

As Tannenbaum (1955, p. 323) observed, "In a sense most message parts may be considered as indices, since it is reasonable to assume that the final interpretation of a communication is a result of the integration of the meanings and significances of its individual units. But the notion of an indexing process, as advanced here, is that some parts may *exercise an inordinate effect* in this integrative process, and that their 'contribution' to the final meaning may be out of all proportion to that of the other parts. It is when a message part exercises such excessive influence that we refer to it as an index."

Interestingly, Tannenbaum (p. 325) ended his article on how the media direct attention toward particular reports by noting, "This analysis still fails to define the mechanism by which an index influences the probabilities or how it channels a particular reaction to the top of the hierarchy. It is the writer's contention that the mechanics of this process rest in the neurophysiological system of the individual, and will ultimately have to be accounted for on the microscopic level of analysis."

Attempts to link the theories

Because it has been observed that the five theories analyzed here share independent or dependent variables and that they all relate in some way to how the media direct attention, a variety of attempts have been made to connect them. For instance, some theorists have proposed that two or more of these theories are merely special cases, extensions or outcomes of another and that they therefore should be subsumed into that theory.

Agenda setting and news priming. Because both agenda setting and news priming depend on how the news media highlight or ignore certain political issues, Kinder (1998, p. 823) called news priming a "close companion to agenda setting." Glynn and colleagues (1999, p. 390) said, "If news media influence which issues people think about, how does the news provide cues to prompt or focus that thinking about any one issue? Some clues to this can be found in Iyengar and Kinder's use of the concept of *priming.* When faced with an often bewildering array of complex information about an issue, citizens need to choose which facets of it they will consider as most relevant. The news helps them do that, Iyengar and Kinder hypothesize, by priming, or drawing greater attention to some aspects of an issue at the expense of others."

Weaver, McCombs and Shaw (1998) viewed news priming as an outcome of agenda setting. As they said, "*Priming* is the impact that agenda-setting can have on the way individuals evaluate public officials by influencing the thematic areas or issues that individuals use to form these evaluations." Iyengar and Simon (1993), in their research on public opinion regarding the Persian Gulf War, also explicitly described priming as a consequence of agenda setting. They found that as the conflict began to receive heavy news play, it subsequently became the most important problem, according to public opinion polls--the basic agenda setting effect. However, they also observed that the news coverage subsequently influenced overall evaluation of the president --the news priming effect.

Second-level agenda setting and media framing. By highlighting certain attributes of a political issue and ignoring others, second-level agenda setting also may appear to be a process closely related to, if not the same as, media framing. Kinder (1998, p. 822) observed, "this is what frames do: they spotlight some considerations and neglect others, thereby altering the mix of ingredients that citizens consider as they form their opinions on politics." McCombs (1997, p. 6) also defined media framing explicitly in terms of agenda setting. He said media framing "is the selection of a restricted number of thematically related attributes for inclusion on the media agenda when a particular object is discussed." Severin and Tankard (2001, p. 238) said, "The second level of agenda setting can also be thought of as identical to the phenomenon other researchers have called media framing." According to this view, the second level of agenda setting refers to the effects of how an issue is framed in the news media.

Agenda setting, media framing and news priming. Some of the earliest work on media framing was conducted by Entman (1993, p. 53), whose definition of media framing referred both to the process of making some aspects of reality more salient (agenda setting) and to the process of promoting a particular evaluation of responsibility (news priming). As he said, "To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation."

Price and Tewksbury (1997) offered one of the first formal presentations of the psychological processes underlying agenda setting, framing and priming. They (p. 184) noted that these three major media effects are based on the same principles of "knowledge activation and use," and they accounted for their effects in terms of the same model of memory and memory representation (to be discussed below). Price and Tewksbury maintained that media content makes certain attributes more salient, changing the applicability of certain thoughts, resulting in their cognitive activation and use in evaluations.

Other theorists have suggested that both media framing and news priming are direct extensions of agenda setting. This is the position taken by Weaver, McCombs and Shaw (1998), who suggested that framing and priming are natural consequences of agenda setting. This also is the position taken by Comstock and Scharrer (1999), who, in their book synthesizing research on television effects, said, "Conceptually, priming and framing are subspecies of agenda-setting effects." Comstock and Scharrer suggested that "despite their similar function in providing cues for opinion formation," the three different concepts coexist independently simply because they were "developed in different scholarly contexts."

Kinder (1998, p. 821), echoing the words of Lippmann (1922), who is often cited for his early contributions to agenda setting ideas, observed that from the mass media "individual citizens are bombarded with suggestions about how issues should be understood, which problems are important, what solutions should be applied." In a sense, Kinder was describing the traditional demarcations of the theories of media framing ("how issues should be understood"), agenda setting ("which problems are important"), and news priming ("what solutions should be applied"). In his description of the theory of news priming, Kinder (1998, p. 822) explicitly connected it to both agenda setting and media framing: "Assessments of the president's performance are influenced not just by which national problems the networks pay attention to and which they ignore, but also whether the problems that are covered are framed in such a way as to implicate the president."

Arguments against assimilations

Other scholars, however, have argued against such assimilations, maintaining that they are atheoretical encroachments rather than rightful expansions. Particularly vocal have been those who regard agenda setting as distinct from media framing. Gamson (2001, p. xi), for example, objected to the idea that "framing effects can be reduced to a second-order form of agenda setting, focusing on certain attributes of objects and actors." He said agenda setting pays too little attention both to the factors leading to the creation of media frames and to the factors associated with the audience's active interpretation of the texts that embody frames. As he said, "Both the power issues raised in examining production and the meaning issues raised by an audience capable of oppositional and negotiated readings of texts seem to get left out. In this context, the argument that framing can be usefully treated as a secondary component of agenda setting seems too reductionist.... It seems to sap from this rich concept most of its vitality and capacity for producing insight."

This criticism is similar to that of Kosicki (1993, p. 112), who said agenda setting research typically "strips away almost everything worth knowing about how the media cover an issue and leaves only the shell of the *topic*." By focusing on the salience of topics, he (p. 116) said, agenda setting misses a "real focus on the nature of the disagreement between the parties and the essence of the controversy. In short, a great deal of valuable contextual information about the issue would be lost."

Reese (2001, p. 8) also took this position, saying, "The tendency, for example, to classify issues into categories, such as 'the economy' and 'crime,' obscures the important questions of how they are defined in the first place.... Thus, the traditional topical agenda setting approach doesn't reveal much about what makes issues interesting: the way they're defined."

Gamson (2001, p. ix), however, did not limit his criticism to agenda setting. He said a "full-fledged frame analysis" consists of three components: (1) the production system, (2) the examination of texts, and (3) the complex interaction of texts with an active audience engaged in negotiating meaning. He faulted communication scholars who study framing--and not just agenda setting scholars--for focusing on the second component while neglecting the others. He said that communication scholars tend to ignore issues of power, contention and hegemony that relate to how media texts are produced and, at the other end of the process, they tend to treat the audience as relatively passive, ignoring how audiences actively interpret texts.

Maher (2001) also maintained that agenda setting and framing are not interchangeable, mainly because they focus on different components in the communication process. He (p. 88-89) said, "The most basic conceptual rift between agenda setting and framing is how researchers conceptualize the source of frames in the studied communication content.... Scholars in the two research traditions are using the term *framing* differently, and they vary chiefly in where they derive the source of the studied frames.... Framing scholarship typically concentrates on the communicator's framing, that is, the journalist's framing. Agenda-setting research typically examines the transfer of framing salience between the text (as interpreted by the researcher) and the receiver (public)."

While these critiques certainly are provocative and useful, they basically accuse communication research of committing sins of omission rather than commission. Gamson (2001) said scholars in communication and in political sociology (his field) generally handle the second component of a frame analysis--text analysis--in much the same way, and he credited communication scholars for developing new ideas and techniques for carrying out systematic analyses of media texts. What he objected to is that communication scholars have failed to study as well the processes that produce the text and that stimulate audience responses to it.

Some communication scholars studying media framing or agenda setting might respond to such criticism by arguing that they are willing to ignore the front-end process and to begin their study with existing frames, and to let others study how those frames come to be. That may seem a reasonable response. However, ignoring the back-end process, how the audience actively engages texts, may not be as easily dismissed. Gamson's suggestion that communication scholars pay greater attention to how audiences interpret the texts that embody frames seems well placed and difficult for communication scholars to ignore. In other words, anyone studying any mass communication theory of news media effects on public opinion can choose to ignore the question of what leads to the creation of news media content (interesting as that question may be). To them, the "independent variable" is in the text itself. However, it is more difficult for them to circumvent successfully the question of the relationship between this independent variable and some dependent variable of interest. Otherwise, one is engaged in content analysis for only content analysis's sake. Indeed, not only is it difficult to imagine why scholars would want to study textual varieties without believing that these have some interesting effects but it is difficult to imagine *how* they would study textual varieties without having such beliefs to guide them. Thus, Gamson made a good point when he said communication scholars should pay greater attention to how audiences actively engage the texts they analyze.

Scheufele (2000) offered another theoretically based critique of efforts to assimilate media framing into agenda setting theory. He maintained that media framing, on the one hand, and agenda setting and news priming, on the other, have different theoretical premises. According to Scheufele (2000, p. 300), "Both agenda-setting and priming are based on this assumption of attitude accessibility and, in particular, a memory-based model of information processing." In terms of agenda setting, "Mass media can influence the salience of certain issues as perceived by the audience; that is, the ease with which these issues can be retrieved from memory." In terms of news priming, "perceived issue salience becomes the independent variable and influences the role that these issues or considerations play when an individual make a judgment about a political actor."

In contrast, Scheufele (2000) said, the theoretical premise of media framing is attribution. By taking this position, he maintained that framing always involves a process of assigning responsibility for some action. He invoked Heider's (1959) attribution theory, Goffman's (1974) frame analysis, Sherif's (1967) frames of references work and Kahneman and Tversky's (1979) prospect theory as ways to link mass media coverage and the frameworks individuals employ to interpret events.

While this argument rests on the suggestion that all of these theories deal with how people attribute responsibility for actions, this conclusion does not seem to be fully justified. Assigning accountability does not appear to be a necessary feature in any of these theories. Prospect theory, for example, holds that how a decision problem is framed will affect choice. Thus, if the problem is framed so that there appears to be a high probability of gain then the person is more likely to avoid risk, whereas if the problem is framed so that there appears to be a high probability of loss then the person is more likely to seek risk.

Of course, it is always possible to frame a problem in such a way that responsibility is attributed to a person, the environment, society or whatever, but there is no reason to believe that this is a *necessary* aspect of framing. Iyengar (1991) proposed that media framing often does suggest who is responsible for a problem and who is best equipped to resolve it. As Severin and Tankard (2001, p. 279) noted, "His research indicates that much television news, by focusing on discrete events out of context, causes viewers to assign responsibility for social problems to individuals rather than to society as a whole." However, even though Iyengar maintained that the assigning of responsibility represents "some of the most important framing done by the media," he did not say that culpability is an essential element of *every* media frame.

Likewise, frames in prospect theory, attribution theory, frame analysis and frames of reference all can be silent on the question of accountability and still nonetheless be frames. Neither the media frame definition of Gamson nor that of Tankard and his colleagues requires that a frame make an attribution of responsibility. A study by Lasorsa and Reese (1990) of news media coverage of the stock market crash of 1987 found that four different news media with somewhat different audiences (CBS News, the Wall Street Journal, the New York Times and the Austin American-Statesman) each framed the Wall Street crash in different ways. In particular, while some of the media focused on the assigning of responsibility, others tended to ignore that aspect of the story altogether.

Both Iyengar (1991) and Zaller (1992) also theorized that media frames make certain considerations more salient through a process of "accessibility bias." Thus, when TV news programs frame poverty as due to personal as opposed to societal defects, this leads viewers to blame the problem on individuals' shortcomings more than societal conditions or policies. As Glynn and her colleagues (1999, p. 398) said, "Like Zaller, Iyengar relates this to *accessibility bias* in the way in which we recall information from memory, arguing that the more often such stories are viewed on television, the more likely information and conclusions drawn from that information will be more accessible in our memory systems and more easily recalled when prompted."

Thus, the argument that agenda setting and news priming have different theoretical premises than does media framing does not appear to be fully justified. However, the argument that media framing and news priming should be regarded as extensions of agenda setting may be equally faulty. In fact, the opposite position seems to make more sense, that is, that agenda setting and news priming (and status conferral, too) are all special cases of media framing. The arguments supporting this position are presented below.

A theory of news framing

The term "framing" has a relatively simple but particular meaning in psychology. Framing is the process of choosing one form of presentation over alternatives or, as Dawes (1998, p. 512) put it, "the way alternatives are presented ... is technically termed their *framing.*" Framing interests psychologists because, as Dawes (p. 497) noted, "the way in which identical choices are described ('framed') should not affect choice" -- but it does. As Dawes (p. 512) observed, "It turns out that when alternatives are presented in different ways, people often make different choices, even though the alternatives themselves remain unchanged." Dawes (p. 512-513) gave an example of how alternative categorizations can lead to contradictory choices. "For example, consider buying a car and being told that an identical one is available across town for $25 less; saving $25 does not appear to be much of an incentive to travel across town in that context. Now consider buying a vacuum cleaner for $75 and being told that there is an identical one across town for $25 less; the savings of 33 percent do appear to many people to be a sufficient incentive to leave and go across town. In the first case, the decision maker is indicating that a trip across town is not worth $25, while in the second case that same decision maker is indicating that it is." Such an inconsistency is called an "anomaly" and is of great interest to those studying behavioral decision making and judgment. For example, framing is a central concept in Tversky and Kahneman's (1981) influential analysis of decision making.

Building upon this general psychological conceptualization of framing, *media framing* may be defined basically as the process by which the mass media choose one form of presentation over alternatives, and *news framing* may be defined as the process by which the news media choose one form of presentation over alternatives. While what follows here may be applied more generally to media framing, the remainder of this article focuses on the process of framing by the news media, that is, news framing.

When the news media frame an object, such as a political issue, they describe certain aspects of the object but not others. In this way, they draw the attention of their audiences to these aspects of the object, and that leads the audiences to interpret the object in a particular way, and not another. The aspects of the object that can be either spotlighted or ignored may be regarded as attributes of the object. In another context, however, an attribute of an object can be regarded as an object itself. Thus, the economy may be regarded as an object and attributes of that object might include inflation, interest rates, trade deficits, the stock market, taxes, social security, unemployment, and so forth. However, each of these attributes, in turn, can be regarded as a political object in its own right, with its own attributes. Thus, unemployment may be regarded as a political issue and some of its attributes might include unemployment benefits and homelessness. As Glynn and her colleagues (1999, p. 91) noted, "journalists have a choice of many news frames. They can do a very analytical segment on unemployment trends and data, emphasizing policy change. Or they might focus on the vivid story of one unemployed homeless man in New York City."

Political objects, of course, are not limited to political issues and their attributes. Other types of political objects include such things as arguments, cues, candidates, values, attitudes, behaviors and images. In order to avoid confusion and to keep things as simple as possible, adopted here is a term used by Zaller (1992, p. 40) for "any reason that might induce [a person] to decide a political issue one way or the other." He called these reasons "considerations," and, as he said, they consist of the essential elements of public opinion. In other words, a consideration is any reason for favoring one side of a dispute over another. News frames may then be viewed, as Kinder (1998, p. 822) viewed them, this way: "they spotlight some considerations and neglect others."

When we say that news frames "spotlight some considerations," we mean that they draw attention toward some aspects of the object and, by implication, away from others. This attention-drawing power--news framing--underlies all the theories of media effects considered here--agenda setting, status conferral, second-level agenda setting and news priming. Thus, agenda setting occurs when the considerations are political issues and the effect is a consequential change in their salience. Status conferral occurs when the considerations are political actors and the effect is a consequential change in their salience. News priming occurs when the considerations are political issues and the effect is a consequential change in the evaluation of actors associated with responsibility for these issues. Second-level agenda setting occurs when the considerations are the attributes of political issues and the effect is a consequential change in their evaluation.

Beyond attention: The problem of recall

News framing explains how the news media draw people's attention to certain considerations of a political object. However, just because my attention is drawn to something does not mean I necessarily will apprehend it, comprehend it, believe it, remember it or articulate it. For example, suppose news media coverage leads me to attend to health care concerns. Health care is said to be salient to me, on the top of my mind and on the tip of my tongue, so that when a pollster asks me, "What's the most important problem facing the country?" I blurt out, "Health care." But how, precisely, does this process work?

Typically, the argument is made that the news media content has a "priming" effect. Generally, priming refers to the effects of a prior context on the interpretation and retrieval of information (Fiske and Taylor, 1984; p. 231). Exposure to news media content makes me think about health care and thus health care becomes readily available to me as a subsequent response. It becomes "accessible," the term Bruner (1957) used to refer to the ease or speed with which a person can apply a mental representation to a new stimulus. Thus, Smith (1998, p. 397) said, "One effect of an experience--say, reading or thinking about a concept--is that semantically related stimuli can be processed more quickly for a brief time thereafter. This effect is termed *semantic priming.*"

For example, Wegner and Bargh (1998, p. 475) described a news priming study this way: "Sherman, Mackie, and Driscoll (1990) had participants evaluate the effectiveness of politicians. Information about the politician's abilities in both foreign affairs and domestic affairs (e.g., managing the economy) was presented. Participants had been primed beforehand, however, on dimensions relevant to one or the other ability domain. Results showed that the primed dimension was subsequently given more weight in the participant's overall evaluations." Empirical studies demonstrating such news priming effects have begun to amass (Iyengar, Peters and Kinder, 1982; Iyengar and Kinder, 1987; Krosnick and Kinder, 1990; Iyengar, 1991; Iyengar and Simon, 1993; Krosnick, 1993; Krosnick and Brannon, 1993; Stoker, 1993; Pollock, 1994, and Jacobs and Shapiro, 1994).

Agenda setting works in much the same way. The news media, by mentioning some issues and neglecting others, make certain issues more salient, more perceptually accessible and available as a response. Empirical demonstrations of agenda setting are even more numerous than for news priming. Recent studies are reviewed in Dearing and Rogers (1996) and McCombs, Shaw and Weaver (1997)

While the numerous news priming and agenda setting studies often demonstrate quite convincingly that news coverage does lead to the hypothesized effect, rarely do they explore in any great depth how the underlying priming process works.

Generally, priming appears to be a process of misattribution. The person does not realize that the response is being made not because it is particularly appropriate, correct or rational, but because it is readily accessible. In other words, when prompted for a response, the person misattributes what is a readily available answer for what is the "right" answer. (In some cases, of course, these may be the same through coincidence.) Thus, I may say that health care is the most important problem facing the nation not because I truly believe that--were I to do a careful mental review I might find a "better" answer--but because that issue happens to be salient, thanks to exposure to news coverage.

Wegner and Bargh (1998, p. 475) described the priming process this way: "people are typically not aware of the impact that their internal perceptual readinesses play in their interpretations of the social environment and will misattribute the apparent clarity of the perceptual interpretation produced by that readiness or accessibility to the clarity and unambiguity of the information itself."

Thus, the process of semantic priming helps explain how news framing produces the various effects of agenda setting, second-level agenda setting, news priming and status conferral.

There is a much overlooked problem, however, with regard to semantic priming as a complete explanation for news framing effects. As Glynn and her colleagues (1999, p. 390) noted, "An important point about priming phenomena is that they are usually short-lived, almost inevitably replaced by the next attracting stimulus that grabs our attention." As Smith (1998, p. 398) explained, "Empirically, semantic priming effects seem to be quite short-lived. They do not occur if the prime-target delay is more than a few seconds … or if an unrelated word intervenes between the related prime and target."

If priming is a short-term psychological even how then can it account for the media effects with which we are concerned here?

Associative network representations of memory

Berkowitz, who based his theory of the effects of mediated violence on priming, offered a way to resolve this problem (Berkowitz and Rogers, 1986; Jo and Berkowitz, 1994). In accordance with Anderson and Bower's (1973) associationist model of memory, Berkowitz's theory of "cognitive neoassociationism" views thought, feeling and prior memories as nodes in a network interconnected by associated pathways. These cognitive structures are operated upon through a process called "spreading activation" (Collins and Loftus, 1975). When at some point the network is activated this induces a spreading effect that activates associated nodes. Jo and Berkowitz (1994, p. 45) said of the model, "It essentially holds that when people witness, read, or hear of an event via the mass media, ideas having a similar meaning are activated in them for a short time afterwards, and that these thoughts in turn can activate other semantically related ideas and action tendencies." Thus, Berkowitz and Rogers (1986, pp. 58-59) said, "when a thought element is activated, or brought into focal awareness, the activation radiates out from this particular note along the associated pathways to other nodes. As a consequence, for some time after a concept is activated, there is an increased probability that it and associated thought elements will come to mind again, creating what has been termed a *priming effect*. It is as if some residual excitation has remained at the activated node for a while, making it easier for this and other related thoughts and feelings to be reactivated."

This is as good an explanation of association network representation and semantic priming as any, but two important points should be made here. First, Berkowitz's theory is but one of quite a number of others that are based on association networks as the mechanisms of memory and memory representation. While association network models of memory and memory representation share many of the same fundamental principles, including the principles of accessibility and priming, there are important differences among some association network memory models. Relevant here is the question of decay of activation. Most association network models maintain that activation decays rapidly, within seconds, at most, unless maintained by a flow of activation from other nodes (e.g., Anderson, 1983; Ostrom, Skowronski and Nowak, 1994). However, some association network models assume that activation can last for much longer, even hours or days (e.g., Higgins, 1996).

Berkowitz offered an explanation for how priming effects can be extended almost indefinitely. He maintained that priming effects can be prolonged either by the news media continuing over time to prompt relevant thoughts or by other stimuli besides the media reactivating the associations (Jo and Berkowitz, 1994). This is in line with Smith's (1998, p. 398) observation that priming effects can endure if "the person rehearses the prime to keep its representation active." Smith (p. 414) used the term "repetition priming" to refer to "the facilitation of processing of a stimulus when the same stimulus has been previously encountered." Thus, whereas the effects of semantic priming usually last no longer than seconds or possibly minutes, the effects of repetition priming can last "hours, days, or months." Relevant here also is the long-established principle that information once learned and then forgotten can be more readily relearned than equivalent new information (Ebbinghaus (1885/1964). Smith (1998, p. 415) called this "another type of repetition priming."

As noted earlier, Berkowitz used his cognitive neoassociationism theory to account for the effects of television violence. However, the basic theoretical principles apply just as well to other media content. In fact, Berkowitz and Rogers (1986, p. 59) cited a number of early social psychological experiments on priming that found that it could influence "personality impressions" formed about target persons (Wyer and Hartwick, 1980; Wyer and Scrull, 1981; Bargh and Pietromonaco, 1982). The connection to Iyengar and Kinder's (1987) view of news priming is clear.

Other theorists have begun to offer more direct theoretical explanations for agenda setting, media framing and news priming that are based on association network models of memory and memory representation, including Higgins (1996), Price and Tewksbury (1997), and Capella and Jamieson (1997). These accounts offer valuable insights into the psychological processes that underlie these important media effects.

Schematic representations of memory

It should also be noted that a second approach to memory and memory representation is as equally prominent, if not more so, than the association network mechanism. This is schematic representation. Smith (1998, p. 410) said, "Schematic models have been the most popular conceptualization of mental representation within social psychology over the past two decades."

Fiske and Taylor (1991, p. 98) said, "a schema may be defined as a cognitive structure that represents knowledge about a concept or type of stimulus." Schemas, they said, "are concerned with ... abstract generic knowledge that holds across many particular instances." Markus and Zajonc (1985, p. 145) said, "for the most part social psychologists who have used the term *schemas* have viewed them as subjective 'theories' about how the world operates. These 'theories' are derived from generalizing across one's experiences with the social world."

Smith (1998, p. 403) offered as concise an explanation as any of how schematic memory representation works: "A single concept or observation could take on quite different meanings if incorporated within different schemas.... A schema can be activated by explicit thought about its topic or by an encounter with relevant information. Activation is all-or-none; that is, making the schema active renders readily accessible al the structured knowledge contained therein.... Even when a schema is below the threshold for activation, it can have a variable level of accessibility, which is influenced by recent or frequent use. A higher degree of accessibility means that the schema can more readily be activated and used.... The primary function of an activated schema is to affect the interpretation of related information. The way ambiguous information is construed and the default values that are assumed for unavailable information are influenced by a schema. Through these interpretive processes, schemas will influence evaluations and other judgments about an object, and also behavior toward the object.... Another effect of an activated schema is to direct attention, sometimes to schema-consistent information and sometimes to unexpected or inconsistent information so that it can receive special processing.... Schemas can also influence memory retrieval and judgment. A schema can serve as a source of cues, generally facilitating retrieval of schema-consistent information. It can also serve as a guide for guessing and reconstruction when retrieval attempts fail or produce ambiguous results."

Like association network models, schematic memory models share fundamental assumptions but also can differ, including the question of the rate at which activation decays. In most schematic models, the use of a schema gives it a fixed amount of activation, which then decays over a short period of time. This property accounts for effects of recent priming. In addition, however, in some models the rate of decay for a given schema also depends on its frequency of use. As Smith (1998, p. 408) observed, models incorporating both ideas can account for "a complex crossover pattern of empirical results. When one schema is primed several times and then another one a single time, an immediate test may show that the recently primed schema 'wins,' but after a delay the more frequently primed schema, decaying more slowly, can win."

Srull and Wyer (1979) found that an increased probability of using a schema that has been recently activated can last as long as a day. However, frequent use of a schema over a long period can also increase its accessibility in a more enduing fashion, what Higgins, King and Marvin (1982) termed "chronic accessibility." For example, Frable and Bem (1985) reported that people can become "gender schematic." For them, gender-related constructs tend to remain highly accessible and they tend to interpret new information in terms of its implications for gender.

While schematic and association network mechanisms often have been presented as polar opposite models of memory and memory representation (Markus and Zajonc, 1985; Fiske and Taylor, 1991), recent work suggests that it may be inappropriate to treat them as opposites or even as competitors. Some theorists have recently proposed ways to reconcile many of their important differences (Ostrom et al., 1994; Carlston and Smith, 1996). Some theories (e.g., Wyer and Srull, 1989) even incorporate both associative and schematic assumptions, making them hybrid models.

Furthermore, it is worth noting that two newer mechanisms of memory and memory representation have been advanced that are likely to contribute further to our understanding of the priming process. These are exemplar models (Smith, 1988) and distributed memory models, also known as connectionist models and parallel distributed processing (PDP) models (Smith, 1996). For a review of these newer models which compares and contrasts them to association network and schematic models, see Smith (1998). Ultimately, these four memory mechanisms--association networks, schemas, exemplars and distributed networks--may be seen as complementing rather than competing with each other. Efforts are already underway to show that structures and functions distinct to one mechanism can be regarded as similar or identical to those in another mechanism and that the different mechanisms may have distinct though occasionally overlapping domains of applicability (Smith, 1998).

Thus, we have now reached the point where we can see how the leading models of memory and memory representation can explain how the process of news framing works, and how news framing can result in such diverse effects as agenda setting, second-level agenda setting, news priming and status conferral.

Empirical support for these effects can be found in two independent studies of the Persian Gulf War of 1990-91. Both Iyengar and Simon (1993) and Krosnick (1993) found that prior to the Gulf War, then-U.S. President George Bush was generally evaluated by the public for his performance on domestic economic issues. However, during and for some time after the Gulf War, due to massive and enduring press coverage, Bush was more likely to be evaluated on the basis of his handling of the war. After some time, the successfully fought Gulf War began to recede from the news agenda and the media once again focused their sights on domestic issues. By the time of the 1992 election, "It's the economy, stupid!" became the opposition party's rallying cry. As Glynn and her colleagues (1999, p. 390) observed, this may have contributed to Bush's re-election defeat.

A similar pattern occurred in the 1980 election, before the theory of news priming was proposed. With Americans being held hostage overseas for many months, the news media repeatedly primed this issue. One major television network evening news program began each broadcast with a bleak illustration of the hostages and a running count of the number of days that "America" was being "held hostage." The ability to provide such consistent, constant, clear and conspicuous coverage represents what is one of the news media's unique and important powers.

Thus, the news media do not only have the ability to direct their audience's attention to certain considerations at the expense of others through the process of *news framing* but they also have the power to sustain that attention through the process of repetition *priming* (chronic accessibility). Together, these two potent mass communication processes help explain how variations in content (due to news framing) can affect public opinion in a variety of important ways, including the effects of agenda setting, second level agenda setting, news priming and status conferral.

Theory-building suggestions

This approach to the understanding of the effects of political communication appears to be both relatively parsimonious and, at the same time, does a relatively good job of integrating theory relating to the effects of the news media on the formation of public opinion. However, while this approach may have much to commend it, it is not without its problems. Among the more serious issues are those dealing with how a "frame" is conceptualized. This may well be the most serious problem facing framing theory. As Pan and Kosicki (2001, p. 38) said, "frame remains an ill-defined concept." The concept has been called slippery, loose, fragmented and fractured--and this by those doing frame analyses! How would I know if a frame came up and bit me? How would I know it was a frame? What would it look like?

One broad definitional schism exists between those who treat a frame more as a micro-level psychological mechanism for cognitive inclusion or exclusion (e.g., Entman, 1993; Tankard et al., 1991) and those who treat a frame more as a macro-level sociological mechanism for cultural inclusion or exclusion (e.g., Ferree, Gamson, Gerhards and Rucht, 2001; Hertog and McLeod, 2001). As Pan and Kosicki (2001, p. 38) put it, "The major difference here is that this latter group of researchers sees frames to be more substantive. A frame reveals a persistent point of view, which is shared on some level and communicable." Reese (2001, p. 11) preferred to view frames as "more than the simple inclusion or inclusion of information," more than just "screening devices." He saw frames as "information generating." To him, frames are socially shared organizing principles that meaningfully structure the social world. This is quite a different view from the strictly psychological approach to framing, which focuses on cognitive effects on the individual person without regard to whether or not the person shares the frame with others.

The problem of defining the frame concept generates further questions about variations in the characteristics of frames. Using his definition of framing, Reese (2001, p. 11-12) observed that some frames appear to be more "persistent" in the sense that they endure longer over time; some appear to be more "ambitious" in the sense that they attempt to organize more meaning than others and have greater scope, and some appear to be more "successful" than others in the sense that more people share them. Frames also can vary in other ways, such as their levels of abstraction and vividness.

While the relevance of some characteristics of frames would appear to depend upon how one defines the concept, the relevance of some characteristics appears to be relevant regardless of definition. Consider, for example, the question of how general or specific frames might be. Often, frames are conceived of in relatively specific terms, such as treating abortion from a fetus's point of view ("pro-life") as opposed to a pregnant woman's point of view ("pro-choice") or treating poverty as a matter of social policy (e.g., focusing on federal program cuts) as opposed to a matter of personal plight (e.g., focusing on individual persons coping with homelessness) (Ferree et al., 2001). Framing also can be viewed as packaging that is more general, such as in covering a political election campaign in terms of "horse race" campaign strategy as opposed to substantive issue proposals (Rhee, 1997). Frames also can be conceptualized in rather broad historical and mythological terms, such as the retelling of the Arthurian legends from a woman's perspective ("The Mists of Avalon") or the retelling of the Civil War saga, "Gone With the Wind," from a slave's perspective ("The Wind Done Gone").

As Gamson (2001, p. x) said of anyone doing framing analysis, "We all struggle with the same issues, particularly the vexing problem of the level of analysis. There are event frames, issue frames, master frames and worldviews--frames within frames within frames. Even within an agreed level of analysis (e.g., frames about abortion policy), two independent investigators will inevitably slice up the discourse in different ways." Gamson rhetorically asked, "Is there any use for a concept that every investigator ends up applying in a different fashion?" As Hertog and McLeod (2001, p. 153) said, "The very point that different researchers will construct very different frames from the same material should send up a red flag."

Definitional issues also lead to questions of where frames are located. Some theorists maintain that frames reside within a text. For example, Gamson (2001, p. x) said, "The frames are a property of texts and the analyst is attempting to identify a coherence and infrastructure that is contained in texts." Other theorists appear to disagree. For example, Entman (1993) said that frames can be located in the communicator, the text, the receiver and the culture. This has led theorists to refer variously to researchers constructing frames, extracting frames, detecting frames, employing frames, and so on. Again, how can I be sure that my butt is safe from an attacking frame?

Since framing theorists have had difficulty defining frames it is not surprising that they have had difficulty measuring frames. As Maher (2001, p. 90) said, "Framing is so broad a concept that it lacks the focus, predictive value, and testability of a more focused midrange theory. And until recently, few studies have successfully quantified framing." Another proponent of framing theory, McAdam (1996) came to much the same conclusion. He (p. 354) said the framing literature has been "long on ringing, programmatic statements, and short on the kinds of detailed empirical applications that would allow for a real assessment of the worth of the concept." Kinder (1998, p. 834) was even blunter: "Enough already about injustice and agency; on with the messy and hard business of empirical application."

Attempts to grapple directly with these difficult conceptualization and measurement issues are becoming more prevalent (e.g., Miller and Riechert, 2001; Pan and Kosicki, 2001; Tankard, 2001). While it may be somewhat ironic, perhaps the greatest impetus for conceptualization and measurement advancements in framing analysis have come recently from McCombs and his agenda-setting colleagues, with their fairly recent claim that framing is an extension of agenda setting (e.g., McCombs and Ghanem, 2001). Attempts by framing theorists to challenge this so-called "theoretical imperialism" (Reese, Gandy and Grant, 2001, p. 2) have resulted in some much needed refinements to the understanding of framing processes and effects. Theoretical and empirical work by those utilizing the agenda setting framework continues to be both prolific and extensive, suggesting that further developments may be expected.

Another major strategy that may have particular promise for advancing the study of framing has developed recently within the framing perspective itself. This is the "multiperspectival approach" offered by Hertog and McLeod (2001). This framing model is both theoretically and methodologically rigorous. It is theoretically deep, addressing not only micro-level psychological processes underlying news framing effects but also the macro-level sociological factors within which these psychological effects occur. The result is a refreshingly comprehensive account of social cognition in a cultural context. At the same time, Hertog and McLeod's approach is methodological ecumenical, employing both qualitative and quantitative measurements that together are almost surely going to capture a richer reality than would either approach alone. Because this multiperspectival approach is relatively ambitious, it remains to be seen to what extent it will be used and, consequently, useful, but it represents a step in the right direction.

While many bystanders may regard the agenda setting-framing debate as generating more heat than light, it has had at least two productive outcomes. Framing theorists can give themselves credit for prodding agenda setting theorists to consider more carefully questions regarding the construction and meaning of agendas and their (limited) place within the universe of political objects. Agenda setting theorists can give themselves credit for prodding framing theorists to consider more carefully questions regarding the conceptualization and measurement of frames. It would appear that both framing and agenda setting scholars might have much to learn from each other.

Framing theorists might also consider the extent to which different news media may present competing frames and their measured effects on audiences. Ghanem (1997) said that most framing studies focus too much on media frames themselves and not enough on their effects on audiences. Rather than measuring the effect of framing on audiences, she said, studies tend simply to assume that effects will occur. However, framing does not occur in a vacuum. For example, Iyengar (1991) suggested that some frames are "episodic," that is event-based, without providing adequate context or explanation, whereas other frames are more "thematic," developing issues and showing more complex relationships across events or policies that may be more broadly informative. Furthermore, Iyengar suggested that television news tends to rely heavily on episodic framing, as opposed to thematic framing. As Glynn and her colleagues (1999, p. 398) pointed out, however, "we need to keep in mind the focus on television news here, remembering that it is but one unit in the mix of information sources people use." In particular, they said, newspapers and magazines "likely deal far more with thematic frames and may well counter television effects, providing a better-balanced information diet to the public." Such intriguing ideas are open to empirical investigation. Questions about the prevalence of one or another type of news framing in different media, and their actual effects on audiences, are worth exploring.

More generally, we could deal more realistically in our theories with the activity of the audience member who is not just a passive receiver of media frames (or agendas) but who comes to the media exposure situation with existing frames (and agendas) (Pan and Kosicki, 1993). Entman (1993b) suggested that audiences can engage in "counterframing." Furthermore, while many framing theorists focus on the "relative prominence" of frames (Miller and Riechert, 2001, p. 115), we should not assume that audiences necessarily respond most strongly to the most prevalent frames. As Reese (2001, p. 8) said, "the most important frame may not be the most frequent." Furthermore, as Hertog and McLeod (2001, p. 152) observed, "many very powerful concepts, central to frames, need not be repeated often to have a great impact. One or two references may be enough to set the frame for a large amount of content." They gave the example of one group's easy and quick success in framing coverage a certain way and an opposing group's repeated but unsuccessful efforts to reframe. A poorly designed textual analysis might conclude wrongly that the second group, by virtue of its more frequent framing efforts, was more successful than the first group.

We also might consider how we can incorporate into the theories analyzed here, as well as other mass communication theories, the emerging models of memory and memory representation that stand a good chance to replace or at least integrate the currently prominent models. Both associationist and schematic models of memory and memory representation have helped communication theorists understand better how variations in media content can lead to important audience effects. However, just as communication theory is not standing still, neither is cognitive theory. Developments in cognitive psychology relating to how memory is structured and how stimuli are represented in and recalled from memory can only enhance understandings of the processes and effects of mass communication.

At the same time, there is much to learn from social psychologists regarding how groups and group dynamics affect both the construction and use of media frames. Framing is of interest because it occurs not in the rarified atmosphere of the laboratory but in the messy real world where people are influenced by a multitude of distinctive interests, including interpersonal relationships of various sorts. Our theories would do well to account realistically for such complexities.

We also live within larger communities and cultures. Communication theory also can benefit from the insights of sociologists regarding how communities and cultures influence what frames are available, how we use them, and with what effects. For example, it would seem to make sense that media framing would be affected by the nature of the mass media available within a community, the "media richness" (diversity) of the community, and the quantity and quality of competing voices for our attention. Yet, many framing analyses pay little heed to such considerations. One of the most interesting aspects of framing theory is the presumption that society privileges certain frame makers, who privilege certain frames, which privilege certain relationships. As Pan and Kosicki (2001, p. 60) said, "framing potency is not evenly distributed." As Gamson (2001, p. ix) said, "frame contests do not take place on a level playing field." As Hertog and McLeod (2001, p. 142) said, "Certain kinds of relationships are privileged by the frame--presenting them as likely and appropriate, whereas others are portrayed as inappropriate, illegitimate, or impossible." Yes, a communication theorist may choose to begin an analysis with a media text. However, much can be learned by considering how the text came to be, including what Gamson (1988) called "framing sponsorship" and what Pan and Kosicki (2001) called the "web of subsidies" that produces the text.

Therefore, a complete theory of media framing, including the effects of agenda setting, news priming, second-level agenda setting and status conferral, might do well to consider the construction and use of frames from the vantage points not only of mass communication but of cognitive psychology, social psychology, sociology and political science, as well. As has been seen, communication theory regarding the effects of the news media on public opinion has profited from work in these other perspectives. As also has been seen, however, there appears to be much exciting work still to be done.

References

Anderson, J.R. (1983) *The Architecture of Cognition.* Cambridge, MA: Harvard University Press.

Anderson, J.R., and Bower, G.H. (1973) *Human Associative Memory.* Washington, DC: Winston and Sons.

Bargh, J.A., and Pietromonaco, P. (1982) "Automatic Information Processing and Social Perception: The influence of Trait Information presented outside of Conscious Awareness on Impression Formation," in *Journal of Personality and Social Psychology, 43*, 437-449.

Berkowitz, L., and Rogers, K.H. (1986) "A Priming Analysis of Media Influences," in J. Bryant and D. Zillmann (eds.), *Perspectives on Media Effects,* 57-81. Hillsdale, NJ: Lawrence Erlbaum Associates.

Bobo, L., and Kluegel, J.R. (1993) "Opposition to Race Targeting: Self-Interest, Stratification Ideology, or Racial Attitudes? in *American Sociological Review, 58,* 443-464.

Bruner, J.S. (1957) "On Perceptual Readiness," in *Psychological Review, 64,* 123-152.

Cappella, J.N., and Jamieson, K.H. (1997) *Spiral of Cynicism: The Press and the Public Good.* Oxford, England: Oxford University Press.

Carlston, D.E., and Smith, E.R. (1996) "Principles of mental Representation," in E.T. Higgins and A. Kruglanski (eds.), *Social Psychology: Handbook of Basic Principles,* 184-210. New York: Guilford Press.

Chaffee, S.H. (1977) "Mass Media Effects: New Research Perspectives," in D. Lerner and L.M. Nelson (eds.), *Communication Research--A Half-Century Appraisal,* 210-241. Honolulu: University Press of Hawaii.

Cohen, B. (1963) *The Press and Foreign Policy.* Princeton, NJ: Princeton University Press.

Collins, A., and Loftus, E. (1975) "A Spreading Activation Theory of Semantic Memory," in *Psychological Review, 82,* 407-428.

Comstock, G., and Scharrer E., *Television: What's On, Who's Watching, and What It Means.* San Diego, CA: Academic Press, 1999.

Dawes, R. M. (1998) "Behavioral Decision Making and Judgment," in Daniel T. Gilbert, Susan T. Fiske and Gardner Lindzey (eds.), *Handbook of Social Psychology, Volume 1*, 497-548. Fourth Edition. Boston: McGraw-Hill.

Dearing, J.W., and Rogers, E.M. (1996) *Agenda-Setting.* Thousand Oaks, CA: Sage.

Ebbinghaus, H. (1964) *Memory: A Contribution to Experimental Psychology.* (Translated by H.A. Ruger and C.E. Bussenius.) New York: Dover. (Original publication, 1885).

Entman, R.M. (1993) "Framing: Toward Clarification of a Fractured Paradigm," in *Journal of Communication, 43,* 51-58.

Entman, R.M. (1993b) "Freezing Out the Public: Elite and Media Framing of the U.S. Anti-Nuclear Movement," in *Political Communication, 10,* 155-173.

Ferree, M.M.; Gamson, W.A.; Gerhards, J., and Rucht, D. (2001) *Shaping Abortion Discourse: Democracy and the Public Sphere in Germany and the United States.* New York: Cambridge University Press.

Fiske, S.T., and Taylor, S.E. (1984) *Social Cognition.* New York: Random House.

Fiske, S.T., and Taylor, S.E. (1991) *Social Cognition,* Second Edition. New York: McGraw-Hill.

Frable, D.E.S., and Bem, S.L. (1985) "If You Are Gender Schematic, All Members of the Opposite Sex Look Alike," in *Journal of Personality and Social Psychology, 49,* 459-468.

Gamson, W.A. (1988) "A Constructionist Approach to Mass Media and Public Opinion," in *Symbolic Interaction, 11,* 161-174.

Gamson, W.A. (1992) *Talking Politics.* Cambridge: Cambridge University Press.

Gamson, W.A. (2001) "Foreword," in S/D. Reese, O.H. Gandy, Jr., and A.E. Grant (eds.), *Framing Public Life: Perspectives on Media and Our Understanding of the Social World,* ix-xi. Mahwah, NJ: Lawrence Erlbaum Associates.

Gamson, W.A., and Lasch, K.E. (1983) "The Political Culture of Social Welfare Policy," in S.E. Spiro and E. Yuchman-Yaar (eds.), *Evaluating the Welfare State.* New York: Academic Press.

Gamson, W.A., and Modigliani, A. (1983) "Media Discourse and Public Opinion on Nuclear Power: A Constructionist Approach," in *American Journal of Sociology, 95,* 1-37.

Gamson, W.A., and Modigliani, A. (1987) "The Changing Culture in Affirmative Action," in R.A. Braumgart (ed.), *Research in Political Sociology, Volume 3,* 137-177. Greenwich, CT: JAI Press.

Ghanem, S. (1997) "Filling in the Tapestry: The Second Level of Agenda Setting," in M.E. McCombs; D.L Shaw, and D. Weaver (1997) *Communication and Democracy: Exploring the Intellectual Frontiers in Agenda-Setting Theory.* Mahwah, NJ: Lawrence Erlbaum, pp. 3-14.

Gitlin, T. (1980) *The Whole World is Watching: Mass Media in the Making and Unmaking of the New Left.* Berkeley: University of California Press.

Glynn, C.J.; Herbst, S.; O'Keefe, G.J., and Shapiro, R.Y. (1999) *Public Opinion.* Boulder, CO: Westview Press.

Goffman, E. (1974) *Frame Analysis: An Essay on the Organization of Experience.* Cambridge, MA: Harvard University Press.

Higgins, E.T. (1996) "Knowledge Activation: Accessibility, Applicability and Salience," in E.T. Higgins and A.W. Kruglanski (eds.), *Social Psychology: Handbook of Basic Principles,* 133-168. New York: Guilford.

Higgins, E.T., King, G.A., and Marvin, G.H. (1982) "Individual Construct Accessibility and Subjective Impressions and Recall," in *Journal of Personality and Social Psychology, 43,* 35-47.

Heider, F. (1959) *The Psychology of Interpersonal Relations, Second Edition.* New York: Wiley.

Hertog, J.K., and McLeod, D.M. (2001) "A Multiperspectival Approach to Framing Analysis: A Field Guide," in S.D. Reese, O.H. Gandy, Jr., and A.E. Grant (eds.), *Framing Public Life: Perspectives on Media and Our Understanding of the Social World,* 139-161. Mahwah, NJ: Lawrence Erlbaum Associates.

Iyengar, S. (1991) *Is Anyone Responsible? How Television Frames Political Issues.* Chicago: University of Chicago Press.

Iyengar, S., and Kinder, D.R. (1987) *News that Matters: Television and American Opinion.* Chicago: University of Chicago Press.

Iyengar, S.; Peters, M.D., and Kinder, D.R. (1982) "Experimental Demonstrations of the 'Not-So-Minimal' Consequences of Television News Programs," in *American Political Science Review, 76,* 848-858.

Iyengar, S., and Simon, A. (1993) "News Coverage of the Gulf Crisis and Public Opinion: A Study of Agenda-Setting, Priming and Framing," in *Communication Research, 20,* 365-383.

Jacobs, R., and Shapiro, R.Y. (1994) "Issues, Candidate Image, and Priming: The use of Private Polls in Kennedy's 1960 Presidential Campaign," in *American Political Science Review, 88,* 527-540.

James, W. (1890) *The Principles of Psychology.* New York: Holt.

Kinder, Donald R. (1998) "Opinion and Action in the Real of Politics," in D.T. Gilbert, S.T. Fiske and G. Lindzey (eds.), *Handbook of Social Psychology, Volume 2,* 778-867. Fourth Edition. Boston: McGraw-Hill.

Jo, E., and Berkowitz, L. (1994) "A Priming Analysis of Media Influences: An Update," in J. Bryant and D. Zillmann (eds.), *Media Effects: Advances in Theory and Research*, 43-60.

Kahneman, D., and Tversky, A. (1979) "Prospect Theory: An Analysis of Decision under Risk," in *Econometrica, 47*, 263-291.

Kinder, D.R., and Sanders, L.M. (1990) "Mimicking Political Debate with Survey Questions: The Case of White Opinion on Affirmative Action for Blacks," in *Social Cognition, 8*, 73-103.

Kinder, D.R., and Sanders, L.M. (1996) *Divided by Color: Racial Politics and Democratic Ideals.* Chicago: University of Chicago Press.

Kosicki, G. (1993) "Problems and Opportunities in Agenda-Setting Research: A 20-Year Assessment," in *Journal of Communication, 43*, 100-128.

Krosnick, J.A. (1993) "The Media and the Foundations of Presidential Support: George Bush and the Persian Gulf Conflict," in *Journal of Social Issues, 49*, 167-182.

Krosnick, J.A., and Brannon, L.A. (1993) "The Impact of the Gulf War on the Ingredients of Presidential Evaluations: Multidimensional effects of Political Involvement," in *American Political Science Review, 87*, 963-975.

Krosnick, J.A. and Kinder, D.R. (1990) "Altering the Foundations of Popular Support for the President Through Priming: Reagan and the Iran-Contra Affair," in *American Political Science Review, 84,* 495-512.

Lang, G.E., and Lang, K. (1983) *The Battle for Public Opinion: The President, the Press and the Polls During Watergate.* New York: Columbia University Press.

Lasorsa, D.L., and Reese, S.D. (1990) "News Source Use in the Crash of 1987: A Study of Four National Media," *Journalism Quarterly,* 67, pp. 60-71.

Lasswell, H.D. (1948) "The Structure and Function of Communication," in Lyman Bryson (ed.), *Communication of Ideas.* New York: Harper.

Lazarsfeld, P.F., and Merton, R.K. (1948) "Mass Communication, Popular Taste and Organized Social Action," in L. Bryson (ed.), *The Communication of Ideas,* 95-118. New York: Harper.

Lippmann, W. (1922) *Public Opinion.* New York: Harcourt, Brace and Company.

Maher, T.M. (2001) "Framing: An Emerging Paradigm or a Phase of Agenda Setting?" in S.D. Reese, O.H. Gandy, Jr., and A.E. Grant (eds.), *Framing Public Life:*

Perspectives on Media and Our Understanding of the Social World, 83-94. Mahwah, NJ: Lawrence Erlbaum Associates.

Markus, H., and Zajonc, R.B. (1985) "The Cognitive Perspective in Social Psychology," in G. Lindzey and E. Aronson (eds.), *Handbook of Social Psychology, Third Edition, Volume One,* 137-230. New York: Random House.

McAdam, D. (1996) "Conceptual Origins, Current Problems, Future Directions," in D. McAdam, J.D. McCarthy, and M.N. Zald (eds.), *Comparative Perspectives on Social Movements,* 23-40. Cambridge: Cambridge University Press.

McCombs, M.E. (1997) "New Frontiers in Agenda-Setting: Agendas of Attributes and Frames." Paper presented to the annual convention of the Association for Education in Journalism and Mass Communication, Chicago.

McCombs, M.E., and Estrada, G. (1997) "The News Media and the Pictures in Our Heads," in S. Iyengar and R. Reeves (eds.), *Do the Media Govern? Politicians, Voters, and Reporters in America,* 237-247. Thousand Oaks, CA: Sage.

McCombs, M.E., and Ghanem, S.I. (2001) "The Convergence of Agenda Setting and Framing," in S.D. Reese, O.H. Gandy, and A.E. Grant (eds.), *Framing Public Life: Perspectives on Media and Our Understanding of the Social World,* 67-81. Mahwah, NJ: Lawrence Erlbaum Associates.

McCombs, M.E., and Shaw, D.L. (1972) "The Agenda-Setting Function of Mass Media," in *Public Opinion Quarterly, 36,* 176-187.

McCombs, M.E.; Shaw, D.L., and Weaver, D. (1997) *Communication and Democracy: Exploring the Intellectual Frontiers in Agenda-Setting Theory.* Mahwah, NJ: Lawrence Erlbaum.

McLeod, J.M.; Kosicki, G.M., and McLeod, D.M. (1994) "The Expanding Boundaries of Political Communication Effects," in J. Bryant and D. Zillman (eds.), *Media Effects: Advances in Theory and Research,* Hillsdale, NJ: Lawrence Erlbaum, pp. 123-162.

Miller, M.M., and Riechert, B.P. (2001) "The Spiral of Opportunity and Frame Resonance: Mapping the Issue Cycle in News and Public Discourse," in S.D. Reese, O.H. Gandy, and A.E. Grant (eds.), *Framing Public Life: Perspectives on Media and Our Understanding of the Social World,* 107-121. Mahwah, NJ: Lawrence Erlbaum Associates.

Nelson, T.E., and Kinder, D.R. (1996) "Issue Frames and Group-Centrism in American Public Opinion," in *Journal of Politics, 58,* 1055-1078.

Ostrom, T.M.; Skowronski, J.J., and Nowak, A. (1994) "The Cognitive Foundation of Attitude: It's a Wonderful Construct," in P.G. Devine, T.M. Ostrom, and D.L. Hamilton (eds.), *Social Cognition: Impact on Social Psychology,* 195-257. Orlando, FL: Academic Press.

Pan, Z., and Kosicki, G.M. (1993) "Framing Analysis: An Approach to News Discourse," in *Political Communication, 10,* 55-75.

Pan, Z., and Kosicki, G.M. (2001) "Framing as a Strategic Action in Public Deliberation," in Stephen D. Reese, Oscar H. Gandy, Jr., and August E. Grant (eds.), *Framing Public Life: Perspectives on Media and Our Understanding of the Social World,* 35-65. Mahwah, NJ: Lawrence Erlbaum Associates.

Pollock, P.H. III (1994) "Issues, Values, and Critical Moments: Did 'Magic' Johnson Transform Public Opinion on AIDS?" in *American journal of Political Science, 38,* 426-446.

Popkin, S.L. (1991) *The Reasoning Voter.* Chicago: University of Chicago Press.

Price, V., and Tewksbury, D. (1997) "News Values and Public Opinion: A Theoretical Account of Media Priming and Framing," in G.A. Barnett and F.J. Boster (eds.), *Progress in Communication Sciences, Volume 13,* 173-212. Greenwich, CT: Ablex.

Reese, S.D. (2001) "Prologue--Framing Public Life: A Bridging Model for Media Research," in Stephen D. Reese, Oscar H. Gandy, Jr., and August E. Grant (eds.), *Framing Public Life: Perspectives on Media and Our Understanding of the Social World,* 7-31. Mahwah, NJ: Lawrence Erlbaum Associates.

Reese, S.D.; Gandy, O.H., and Grant, A.E. (2001) "Introduction," in S.D. Reese, O.H. Gandy, Jr., and A.E. Grant (eds.), *Framing Public Life: Perspectives on Media and Our Understanding of the Social World,* 1-6. Mahwah, NJ: Lawrence Erlbaum Associates.

Reeves, B.; Thorson, E., and Schleuder, J. (1986) "Attention to Television: Psychological Theories and Chronometric Measures," in Jennings Bryant and Dolf Zillmann (eds.), *Perspectives on Media Effects.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Rhee, J.W. (1997) "Strategy and Issue Frames in Election Campaign Coverage: A Social Cognitive Account of Framing," in *Journal of Communication, 47,* 26-48.

Scheufele, D.A. (2000) "Agenda-Setting, Priming, and Framing Revisited: Another Look at Cognitive Effects of Political Communication," in *Mass Communication and Society, 3,* 297-316.

Schramm, W. (1973) "Channels and Audiences," in I. Pool, W. Schramm, F.W. Frey, N. Maccoby and E.B. Parker (eds.), *Handbook of Communication*. Chicago: Rand McNally. Reprinted (1982) in G. Gumpert and R. Cathcart (eds.), *Inter/Media: Interpersonal Communication in a Media World,* 2nd. ed., pp. 78-92. NY: Oxford University Press.

Severin, W.J., and Tankard, J.W. (2001) *Communication Theories: Origins, Methods, and Uses in the Mass Media, Fifth Edition.* Addison Wesley Longman.

Sherif, M. (1967) *Social Interaction: Process and Products.* Chicago: Aldine.

Sherman, S.J.; Mackie, D.M, and Driscoll, D.M. (1990) "Priming and the Differential use of Dimensions in Evaluations," in *Personality and Social Psychology Bulletin, 16,* 405-418.

Smith, E.R. (1988) "Category Accessibility Effects in a Simulated Exemplar-Only Memory," in *Journal of experimental Social Psychology, 24,* 448-463.

Smith, E.R. (1996) "What Do Connectionism and Social Psychology Offer Each Other?" in *Journal of Personality and Social Psychology, 70,* 893-912.

Smith, E.R. (1998) "Mental Representation and Memory," in Daniel T. Gilbert, Susan T. Fiske and Gardner Lindzey (eds.), *Handbook of Social Psychology, Volume 1,* 391-445. Fourth Edition. Boston: McGraw-Hill.

Sniderman, P.M., and Piazza, T. (1993) *The Scar of Race.* Cambridge, MA: Harvard University Press.

Srull, T.K., and Wyer, R.S. (1979) "The Role of Category Accessibility in the Interpretation of Information about Persons: Some Determinants and Implications," in *Journal of Personality and Social Psychology, 37,* 1660-1672.

Stoker, L. (1993) "Judging Presidential Character: The Demise of Gary Hart," in *Political Behavior, 5,* 193-223.

Stoker, L. (in press-b) "Political Value Judgments," in J. Kuklinski (ed.), *Political Values and Political Psychology.* Cambridge, MA: Cambridge University Press.

Tankard, J.W. (2001) "The Empirical Approach to the Study of Media Framing," in Stephen D. Reese, Oscar H. Gandy, Jr., and August E. Grant (eds.), *Framing Public Life: Perspectives on Media and Our Understanding of the Social World,* 95-106. Mahwah, NJ: Lawrence Erlbaum Associates.

Tankard, J.W.; Hendrickson, L.; Silberman, J.; Bliss, K., and Ghanem, S. (1991) "Media Frames: Approaches to Conceptualization and Measurement." Paper presented to the annual convention of the Association for Education in Journalism and Mass Communication, Chicago.

Tannenbaum, P.H. (1955) "The Indexing Process in Communication," in *Public Opinion Quarterly*. Reprinted (1970) in W. Schramm & D.F. Roberts (eds.), *The Process and Effects of Mass Communication*, revised ed., pp. 313-325. Urbana: University of Illinois Press.

Tversky, A., and Kahneman, D. (1981) "The Framing of Decisions and the Psychology of Choice," in *Science, 211*, 453-458.

Weaver, D.; McCombs, M.E., and Shaw, D.L. (1998) "Agenda-Setting Research: Recent Developments in Place and Focus." Paper presented to the annual conference of the World Association for Public Opinion Research, St. Louis, Mo.

Wegner, D.M., and Bargh, J.A. (1998) "Control and Automaticity in Social Life," in Daniel T. Gilbert, Susan T. Fiske and Gardner Lindzey (eds.), *Handbook of Social Psychology, Volume 1*, 446-496. Fourth Edition. Boston: McGraw-Hill.

Wyer, R.S., and Hartwick, J. (1980) "The Role of Information Retrieval and Conditional Influence Processes in Belief Formation and Change," in Leonard Berkowitz (ed.), *Advances in Experimental Social Psychology, Volume 13*. New York: Academic.

Wyer, R.S., and Srull, T. K. (1981) "Category Accessibility: Some Theoretical and Empirical issues Concerning the Processing of Information," in E. Higgins, C. Herman and M. Zanna (eds.), *Social Cognition, Volume One*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Wyer, R.S., and Srull, T. K. (1989) *Memory and Cognition in Its Social Context.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Zaller, J. R. (1992) *The Nature and Origins of Mass Opinion.* New York: Cambridge University Press.

Running head: COMPUTERS AND DISPLACEMENT EFFECTS

Is the computer a functional alternative to traditional media?

Xiaomei Cai
Assistant Professor
250 Pearson Hall
Department of Communication
University of Delaware
Newark, DE 19716
302-831-8778
xcai@udel.edu

Paper to be presented to the 2002 Association for Education in Journalism and Mass Communication, Communication Theory and Methodology Division.

Abstract

This study examined the time displacement effects of computers on traditional media in light of the functional equivalence principle. Subjects were asked to give up using computers (except for schoolwork) and television respectively for a day. The results showed that giving up computer use did not increase time allotted to other media. On the contrary, giving up viewing television increased time spent with other traditional media. The implication for the functional equivalence principle was discussed.

Is the computer a functional alternative to traditional media?

Introduction

In the past century, numerous media have been introduced to society, with some widely diffused. People are living in a media-saturated society. At present, most American households have television sets, radios, VCRs, and telephones. A recent addition to the family of popular media was the computer. As of September 2001, 174 million Americans (66%) used computers (Department of Commerce, 2002). Computers have been gradually integrated into people's daily lives.

The adoption and utilization of computers have generated changes at various levels in society. At the individual level, one fundamental change that computers have brought to people is on their time allocation patterns. As a newly adopted medium, the computer demanded time. The time spent with it must come at the expense of engaging in other activities, including the use of other mass media because people only have a fixed 24 hours a day available. This substitution of one activity of another is called the displacement effect (Neuman, 1988). Displacement effects were observed among many "new" media (Himmelweit, Oppenheim, & Vince, 1958; Maccoby, 1951; Schramm, Lyle, & Parker, 1961). With the popularity of computers, more and more studies reported that the use of computers decreased the time people spent with traditional media, especially with television (e.g. Rogers, 1985; Cole, 2001). This paper examines and compares the time adjustments that people make when either the computer or television is not available.

Literature Review

Time displacement studies

The scarcity of time has been the cornerstone of displacement studies. Because the allocation of time is a zero sum phenomenon, a certain amount of time has to be taken away from the existing activities in order to make time for the new medium (Robinson, 1969). For this reason, time displacement is regarded as an important outcome associated with the introduction of new media.

Studies of media displacement effects took off after the wide diffusion of television. A number of studies reported decline of the existing media's time in the face of television (Brown, Cramond, & Wilde, 1974; Coffin, 1955; Himmelweit, Oppenheim, & Vince, 1958; Maccoby, 1951; Schramm, Lyle, & Parker, 1961; Weiss, 1969). Almost all the major media at the time: movies, radio, books, magazines, and newspapers were affected. Non-media activities were also affected by television (e.g., Maccoby, 1951).

Prior to the introduction of television, radio was the dominant family entertainment medium in American households. A majority of Americans spent at least an hour listening to radio in the evening (Lazarsfeld & Kendall, 1948). Radio listening took the biggest hit when television was introduced. One unanimous finding of all displacement studies was that radio listening time was greatly reduced in the advent of television (Coffin, 1955; Himmelweit et al., 1958; Kippax & Murray, 1978; Maccoby, 1951; Parker, 1961; Schramm et al., 1961). Himmelweit et al (1958) observed that radio listening almost stopped among children as soon as they were introduced to television. Even if they still listened to radio, the time has been shortened to one hour a week. Radio listening time increased a little after people got used to television, but it never got back to its original level (Bogart, 1956).

Other mass media activities were also affected by the introduction of television, if were not as severely as radio listening. It was generally agreed that movie going time greatly declined at first (Belson, 1967; Bogart, 1956; Comstock, Chaffee, Katzman, McCombs, & Roberts, 1978; Schramm et al., 1961). However, movie going regained its popularity among adolescents after they were accustomed to television (Comstock et al., 1978; Maccoby, 1951). Similar findings were observed in comic book reading (Himmelweit et al., 1958).

The impact of television on newspapers, magazines, and other book reading time was less clear (Brown et al., 1974; Himmelweit et al., 1958; Schramm et al., 1961). For instance, Coffin (1955) reported that book reading suffered after the arrival of television. On the other hand, Schramm et al. (1961) found no significant drop in book reading time and even suggested that television promoted book reading time to some extent.

A few new media were introduced to society after television, such as cable, VCR, and videotext. None of these new media, however, exerted similar impact on other media as television had.

It was the introduction of computers, later the Internet that could potentially match the impact television had on other mass media. Even before the addition of the Internet, computer usage at home was reported decreasing the time spent watching television (Rogers, 1985; Vitalari, Venkatesh, & Gronhaug, 1985). Entering the Internet age, more and more studies reported decline of television viewing time after acquiring computers (James, Wotring, & Forrest, 1995; Kayany & Yelsma, 2000; Kaye, 1998; Nie, 2001; Nie & Erbring, 2000; Perse & Dunn, 1998; Pew Internet Research, 2002). Only a couple of studies did not observe similar reduction in television viewing time after the adoption of computers (Coffey & Stipp, 1997; Robinson & Kestnbaum, 1999).

Research also examined how computers/Internet affected other traditional media use. Both Nie and Erbring (2000) and Pew Internet Research (2002) reported decreases in newspaper reading time among Internet users. James et al. (1995) reported that radio listening was not affected by bulletin board use, but it reduced time spent talking on telephone and reading books. However, a few other studies failed to observe any interaction between telephone time and online communication (Chou, 2001; Katz, Rice, & Aspden, 2001; Wellman, Haase, Witte, & Hampton, 2001).

The functional equivalence principle

As researchers look for explanations behind computers' displacement or non-displacement effects of traditional media, they fall back on one of the old principles behind the displacement effects: the functional equivalence principle. Based on the findings of their studies, Himmelweit et al. (1958) originally introduced three principles to explain the displacement effects of television: displacement of marginal activities; functional similarity, and transformed activities. The functional similarity principle, later known as functional equivalence principle, states that if a new medium is perceived as being able to more effectively satisfy the same needs fulfilled by the old media, it will, to some extent, displace the old. This principle has been widely applied to explaining displacement effects (Blumler & Katz, 1974; Brown et al., 1974; DeFleur, 1960; Gadberry, 1980; Mutz, Roberts, & van Vuuren, 1993; Parker, 1963; Schramm, 1973).

Television's displacement of radio time was explained in light of the functional equivalence principle. Radio provided the public companionship, useful information, escape from loneliness or boredom, and excitement (Mendelson, 1964). Radio serials (i.e., soap operas) served gratifications such as emotional release, wishful thinking and advice (Herzog, 1942). Television, on the other hand, was perceived as being able to serve most of these needs better than radio did, therefore, radio time was largely displaced by television time (Coffin, 1955; Maccoby, 1951; Schramm et al., 1961). Time displacement effects of other media were also accounted for by applying the functional equivalence principle.

Similar discussion on computers' displacement effects on television is underway. Computers represent an ever-changing technology that has evolved from a single-task machine to a multidimensional medium. Computers have been taking on more and more functions that traditional media possess. The users can watch videos, listening to radio, reading newspapers and magazines on a computer. Gratifications that computers could satisfy users are expanding too. Before the Internet age, gratifications associated with computers were mostly utilitarian, such as education, word processing, business use and finance (Vitalari et al., 1985). Entertainment gratification was limited to playing computer games. Recent studies showed that ritual use of computers became more and more salient (Ferguson & Perse, 2000; Kayany & Yelsma, 2000; Papacharissi & Rubin, 2000). Kaye (1998) studied college students' World Wide Web use and came up with six gratification categories: entertainment, social interaction, pass time, escape, information and Web site preference (check out specific sites). Ebersole (2000) identified the following gratification factors: research and learning, entertainment, communication/social interaction, avoid boredom, access to material otherwise unavailable, product information and technical support, playing games, product purchases, and visiting sexually explicit sites. Most of the gratifications found in the above studies were similar to television gratifications categories (e.g. Rubin, 1983). Ferguson and Perse (2000) compared gratifications associated with television viewing and the Web activities, and they identified four television related Web surfing motivations: entertainment, pass time, relaxation-escape, and social information. It seems that the computer is competing against television in satisfying various gratifications.

In the past few years, people's use of computers has been increasing steadily (U.S. Census Bureau, 2001). Moreover, television viewing time has been decreasing among computer users (Pew Internet and American Life, 2002). The critical question is whether the computer is taking television's place. Similar questions could also be asked about computers and any traditional media.

The present study seeks to test the displacement effects of computers and compare roles of television and computers. Instead of doing a survey asking respondents to draw their own conclusions on time displacement, an experiment was conducted to look at how deprivation of the computer use (except for school work) and television viewing each for day may affect time allocated to other media. The logic here is this: If the displacement effects exist, then time spent with other media should witness an increase after the deprivation of the computer use; if the computer has no time displacement effects, the time spent with other media should remain the same. Similarly, if computers and television are considered equally satisfying people's needs, then the amount of time shift across other media when television viewing is given up should be equal to the amount of time shift when computer use is given up. So the hypotheses are:

H_1: When computer use is given up, there will be an increase in the amount of time spent with television and other traditional media.

H2: When television viewing is given up, there will be an increase in the amount of time spent with other media.

Method

College students were used as subjects in the present study. College students are active users of all types of traditional media (Kamalipour, Robinson, & Nortman, 1998). They also represent the population that has fully incorporated new media technologies into their lives. Ninety percent of full-time, four-year college students use the Internet, and 66 percent of them surf the Web at least once a day (Lake, 2000). College students are also avid users of cell phones, MP3 players and many other new media. In that this study is interested in the consequences of giving up one medium, it is appropriate to study a population that has already embraced all technologies. As a result, college students are ideal subjects for the study.

Subjects recruited for the present study were undergraduates at a heavily wired, Midwestern American university where virtually everyone had access to computers with high-speed Internet connections on campus. A total of 161 subjects participated in the experiment. Fifty-one percent of them were males and forty-nine percent of them were females. The ages of the subjects ranged from 17 to 27 (M=20).

A diary method was employed to keep track of subjects' time spent on each medium. This method has been used extensively in time allocation studies and has been shown to be a highly reliable method of measuring time (Robinson & Godbey, 1999). In this study, subjects were not asked to keep a 24-hour, all-activity diary. Instead, subjects were asked to keep a three-day media diary where subjects kept track of all of their media activities over that time period. Diary forms with clear instructions were provided to each subject. On one day, subjects were asked to engage in all media activities that they normally would do. On one of the other days, subjects were asked to do what they normally would do except not watch television. On the remaining day, subjects were asked to not use the computer for any leisure pursuits.

An ideal manipulation for this study would be to ask the subjects to give up computer use completely. But, given that college students rely on computers heavily for their schoolwork, computer activities required by classes could not be prohibited in this study. This compromise in manipulation was not likely to pose a serious threat to the validity of this study, however, because the use of the computer as a mass medium comparable to television, newspapers, etc., was still well under control here. The results of this study showed that subjects did comply with the requirement by greatly reducing their computer time, which, from a retrospective angle, also bears evidence to the popular use of the computer for leisure purposes among college students (Ferguson & Perse, 2000).

Eleven media (i.e., computers, television, movies, VCR, CD, radio, newspapers, magazines, video games, school books, and leisure books) were included in the media diary. The amount of time spent with each medium was solicited. More detailed information was sought about computer use. Computer activities were divided by type (online/offline) and purpose (for school/work, or fun). Offline activities included: word processing; data processing; playing games using the CD-ROM; playing computer games; listening to CDs; and other. Online activities included using regular emails; participating in chats (e.g., ICQs, Instant Messengers, MUDs); checking out specific Web sites; randomly surfing the Web; working on programming or Web sites; conducting transactions (e.g., order products, make reservations or auction); listening to music online; watching streaming videos; playing online computer games; and other.

In the data analysis, individual computer activities were clustered into online, offline and total computer activities.

Results

On the normal day, subjects reported spending nearly four hours on computer activities (233 minutes), more than half of this time (125 minutes) was devoted to online activities. Nearly two hours (115 minutes) of computer time were related to school or work activities. Subjects spent a little over two hours (129 minutes) watching television on that day.

Besides using computers and television, subjects also participated in other media activities. On the normal day, they reported listening to CDs for over an hour (79 minutes), reading school books for 45 minutes, talking on telephone for 40 minutes, using VCR for half an hour (29 minutes), listening to radio for nearly half an hour (26 minutes), reading newspapers for 13 minutes, reading leisure books for 12 minutes, playing videogames for 10 minutes, and reading magazines for 10 minutes.

Pearson correlations looked at the bivariate relationships between media time. The overall computer time significantly correlated with the amount of time going to movies (r=.17, p<.03), playing videogames (r=.35, p<.001), reading magazines (r=.18, p<.02), listening to CDs (r=.22, p<.01), reading school books (r=.19, p<.02), and reading leisure books (r=.22, p<.01).

The amount of online time bore significant positive correlations with almost all traditional media time ($r_{newspaper}$=.24, p<.01; r_{VCR}=.16, p<.04; r_{movie}=.21, p<.01; $r_{videogame}$=.34, p<.01; r_{CD}=.28, p<.01; $r_{magazine}$=.26, p<.01; $r_{schoolbook}$=.17, p<.03; and $r_{leisurebook}$=.19, p<.02). The exceptions were with television, radio and telephone.

The amount of offline time was only significantly correlated with two other traditional media: the time with videogames (r=.24, p<.01), and with leisure books (r=.19, p<.02).

Television time was significantly correlated with newspaper reading time ($r_{newspaper}$=.21, p<.01), and leisure book reading time ($r_{leisurebook}$=.29, p<.01). It was not significantly correlated with either online or offline computer activities.

The first hypothesis predicted that traditional media use would increase when computer use was given up. Time shifts of all media between the normal day and no-computer day, and the normal day and no-television day were examined. On the normal day, subjects spent nearly four hours on computer activities (233 minutes), more than half of this time (125 minutes) was devoted to online activities. On the day when computer was prohibited, subjects reduced their total computer time by half and merely spent 38 minutes online. Therefore, subjects were left with nearly two-hour more of free time on that day. However, the total amount of time they spent on traditional media did not experience significant changes (see Table 1). Time spared from using computers was not transferred to other mass media. Television viewing time remained unchanged when subjects gave up using computers for a day. When individual media were examined for their changes in time allocation between the normal day and no-computer day, none of the traditional media experienced significant time shifts.

The first hypothesis was not supported.

Table 1 about here

The second hypothesis predicted that when television viewing was given up, other media time should witness increases in time. On the normal day, subjects reported watching television for over two hours (129 minutes). When they were not allowed to watch television for a day, they increased their use of other media by over an hour (62 minutes). This change is significant (t=2.8, p<.01). A few media experienced significant increases of their time. Time spent on reading newspapers increased by three minutes (t=2.46, p<.02), reading school books increased 17 minutes (t=3.04, p<.01), and listening to radio gained 17 minutes (t=3.03, p<.01). Computer activities (total time, online and offline) did not experience any significant time shifts on the no-television day.

When comparing the total amount of time shift on the no-television day and the no-computer day, a significant difference was found (t=2.39, p<.02).

Traditional media experienced significant increase in time on the no-television day, but computer time did not increase. Moreover, the total amount of time increased did not make up the amount of time subjects spent watching television. The second hypothesis was partially supported.

Discussion

This study examined the displacement effects of computers. The first hypothesis predicted that traditional media time would experience a boost in time when computer use was given up. Results of the study did not support the hypothesis. When computer use was prohibited for a day, there was no evidence of increases in television time and the time spent with other media. On the contrary, when television viewing was banned for a day, several traditional media witnessed significant increases in their time. Computer usage, however, did not change. The second hypothesis was partially supported.

The following discussion of the results is based on the acknowledgement that the computer usage was not completely banned on the no-computer day. Results might have been different if subjects had given up using computers completely. However, this shortcoming should not temper the validity of the study. Results of this study showed that subjects did comply with the instruction. On the normal day, subjects reported nearly four hours using computers, but their usage reduced by half when they gave up using computers for leisure pursuits. Moreover, their online usage reduced 70 percent. It is well-known that majority of leisure computer usage is conducted online.

The functional equivalence principle states that if a new medium could serve the same needs equally or better than the existing media, it will displace the existing media (Himmelweit et al., 1958). The computer, as a new medium has been found satisfying similar needs that traditional media are fulfilling (Erbersole, 2000; Ferguson & Perse, 2000; Perse & Dunn, 1998). At the same time, more and more studies are reporting that computer use is decreasing the time spent with other media (Cole, 2001, 2002; Pew Internet and American Life, 2002). Past research, in general, supported computers' displacement effects and the application of the functional equivalence principle. Current study, however, did not find any evidence of computer's displacement effects. By giving up using computers for a day, other media did not experience corresponding increases of usage. The functional equivalence principle failed to explain the findings. The following factors may be at work.

First, functions that computers serve were examined in isolated ways. The computer is a multi-dimensional medium. To certain extent, it resembles every traditional medium. Streaming videos, CD-ROM and DVD functions resemble television and movie's visual appeals; online radio stations and sound clips are similar to radio listening; reading news and books on the Web bear resemblance to reading newspapers and books; instant messages, emails, and net-to-phone look like talking over the telephone; and computer games closely resemble videogames. Those similarities are the foundation of the argument that the computer is a functional alternative to television, newspapers, radio and many other media. However, the computer is an independent medium although it may take on many features of other media. Using computers is a holistic experience and is not simply substituting other media experience. It is not fair to attribute certain gratifications derived from using computers to one single medium's resemblance to computers. Therefore, comparing computers with any traditional media is overlooking its multidimensionality and simplifying the relationships between media.

Second, computer gratifications were examined in the framework of the traditional media. Kaye (1998) identified six gratifications associated with using the Web: entertainment, social interactions, pass time, escape, information, and Web site preferences. Perse and Ferguson (2000) found that Web surfing could fulfill learning, passing time, entertainment, relaxation, escape, excitement, and companionship needs. Erbersole (2000) found similar gratifications using the Web: research and learning, access to entertainment, communication/social interaction, something to do when bored; access to materials otherwise unavailable, product information, technological support, games and sex sites, and consumer transactions. Most of the computer gratifications reported in the above studies were also gratifications associated with using traditional media. Sometimes, researchers directly applied traditional gratification framework to examine computer gratifications (Ferguson & Perse, 2000). To some extent, the framework itself dictates that resemblance between computers and other media is to be found. Unique gratifications associated with computer activities may have been overlooked by researchers.

Third, even if the computer does fulfill similar gratifications that traditional media do, it is still unique in many ways. Newhagen and Rafaeli (1996) identified five defining qualities that the computer/Internet has: interactivity, hypertexuality, synchronicity, multimedia, and packet switching. However, the needs that these computer qualities could fulfill have not been fully explored. Interactivity and synchronicity features were associated with satisfying communication gratifications. Flaherty, Pearce, & Rubin (1998) reported that the Internet could serve the need of meeting people, and communicating with family and friends. Similar findings were reported in many studies

(Erbersole, 2000; Papacharissi & Rubin, 2000; Parker & Plank, 2000). Multimedia quality of computers was approached by looking at relaxation and entertainment needs (Erbersole, 2000; Ferguson & Perse, 2000; Papacharissi & Rubin, 2000; Parker & Plank, 2000). Very little research tackled how the hypertexuality, and packet switching qualities fulfill people's needs. In a word, needs that computers could fulfill are under-studied and many unique functions have not been examined. It is possible that it is these unique functions that attract people to using computers. When people could not access computers, they could not find other media equally fulfilling. Therefore, they did not turn to other media for similar gratifications.

Results of the current study showed that the computer is a unique medium which is not a functional alternative to television or any other traditional medium. The functional equivalence principle was still at work among traditional media.

Limitations

The experimental design could be improved. One potential problem with the design was that computers were given up for only one day. A day may be too short for subjects to miss computers. Subjects could have planned some activities in advance to fill up the void computers left. A couple of days without computers might bring more time changes and use of other media. Moreover, as discussed in the method section, it would be more desirable if all computer activities had been completely prohibited. In this study, subjects may have found it hard to restrain themselves from using computers for entertainment purposes once they logged on. A complete void of computers might enable a better assessment of the relationship between computer use and other media use.

The diary form could also have been better if it had included all the activities the subjects engaged in. A typical time diary includes respondents' 24-hour activities starting at midnight and ending at midnight (Robinson & Godbey, 1999). The advantage of doing a 24-hour all-activity diary lies in its inclusiveness. The present study found that subjects did not turn to other media for compensation when they gave up computers for a day. This means they must have turned to other kinds of activities to fill up the gap left by the computer. With a 24-hour diary, such shifts of time between media and non-media activities would be captured.

Future Research

This study did not find any displacement effects of computers and the functional equivalence principle was not supported. It seems that computers are unique in satisfying people's needs. Future research should go beyond traditional uses and gratifications research framework and identify the gratifications that could be fulfilled by computers. It is also valuable to link these gratifications and computer time.

References

Belson, W. A. (1967). The impact of television. Hamden, CN: Archon Books.

Bogart, L. (1956). The Age of Television: A Study of Viewing Habits and the Impact of Television on American Life. New York: Frederick Ungar Publishing CO.

Blumler, J. D., & Katz, E. (1974). The Use of Mass Communication: Current Perspectives on Gratifications Research. Beverly Hills, CA: SAGE Publications, Inc.

Brown, J. R. Cramond, J. K., & Wilde, R. J. (1974). Displacement effects of television and the child's functional orientation to media. In J. G. Blumler, & E. Katz. (Eds.), The Uses of Mass Communications: Current Perspectives on Gratifications Research (pp. 93-112). Beverly Hills, CA: SAGE Publications, Inc.

Chou, C. (2001). Internet heavy use and addiction among Taiwanese college students: An online interview study. Cyberpsychology & Behavior, 4, 573-585.

Coffey, S. & Stipp, H. (1997). The interactions between computer and television usage. Journal of Advertising Research, 37(2), 61-68.

Coffin, T. E. (1955). Television's impact on society. American Psychologist, 10, 630-641.

Cole, J. I. (2001). Survey the digital future. Retrieved January 19, 2002, from http://www.ccp.ucla.edu

Cole, J. I. (2002). Survey the digital future: Year two. Retrieved January 19, 2002, from http://www.ccp.ucla.edu

Census Bureau (2001). Computer use and ownership. Retrieved January 19, 2002, from http://www.census.gov/population/www/socdemo/computer.html

Comstock, G., Chaffee, S., Katzman, N., McCombs, M., & Roberts, D. (1978). Television and Human Behavior. New York: Columbia University Press.

DeFleur, M. L. (1960). Theories of Mass Communication. New York: David McKay Company, Inc.

Department of Commerce (2002). A nation online: How Americans are expanding their use of the Internet. Retrieved February 20, 2002, from http://www.ntia.doc.gov/ntiahome/dn/

Ebersole, S. (2000). Uses and Gratifications of the Web among students. JCMC 6 (1), Retrieved November 28, 2000, from, http://www.ascusc.org/jcmc/vol6/issue1/ebersole.html

Ferguson, D. A., & Perse, E. M. (2000). The World Wide Web as a functional alternative to television. Journal of Broadcasting and Electronic Media, 44(2), 155-174.

Gadberry, S. (1980). Effects of restricting first graders' TV-viewing on leisure time use, IQ change, and cognitive style. Journal of Applied Developmental Psychology, 1, 45-57.

Herzog, H. (1942). Professional quiz: A gratification study. In P. F. Lazarsfeld, & F. N. Stanton (Eds.), Radio Research, 1941. New York: Duell, Sloan and Pearce.

Himmelweit, H. A., Oppenheim, A. N., & Vince, P. (1958). Television and the Child: An Empirical Study of the Effect of Television on the Young. London: Oxford University Press.

James, M. L., Wotring, C. E., & Forrest, E. J. (1995). An exploratory study of the perceived benefits of electronic bulletin board use and their impact on other communication activities. Journal of Broadcasting and Electronic Media, 39, 30-50.

Kamalipour, Y. R., Robinson, W. L., & Nortman, M, L. (1998). College students' media habits: A pilot study. Retrieved March 20, 2001, from http://orders.edrs.com/DocLibrary/0698/ED415564.PDF

Katz, J. e., Rice, R. E., & Aspden, P. (2001). The Internet, 1995-2000: Access, civic involvement, and social interactions. American Behavioral Scientist, 45, 405-419.

Kayany, J. M., & Yelsma, P. (2000). Displacement effects of online media in the socio-technical contexts of households. Journal of Broadcasting and Electronic Media, 44(2), 215-229.

Kaye, B. K., (1998). Uses and gratifications of the World Wide Web: From couch potato to web potato. The New Jersey Journal of Communication, 6, 21-40.

Kippax, S., & Murray, J. P. (1980). Children's social behavior in three towns with differing television experience. Journal of Communication, 28, 19-29.

Lake, D. (2000). Online population spotlight: Net businesses go back to college. Retrieved November 21, 2000, from: http://thestandard.com

Lazarsfeld, P. E., & Kendall, P. L. (1948). Radio listening in America: The people look at radio. New York: Prentice-Hall.

Maccoby, E. (1951). Television: Its impact on school children. Public Opinion Quarterly, 15, 421-444.

Mutz, D. C., Roberts, D. F., van Vuuren, D. P. (1993). Reconsidering the displacement hypothesis: Television's influence on children's time use. Communication Research, 20, 51-75.

Neuman, S. B. (1988). The displacement effect: assessing the relation between television viewing and reading performance. Reading Research Quarterly, 23(4), 414-440.

Newhagen, J. E., & Rafaeli, S. (1996). Why communication researchers should study the Internet: A dialogue. Journal of Computer-Mediated Communication, 1(4). Retrieved September 17, 1998, from http://www.ascusc.org/jcmc/vol1/issue4/vol1no4.html

Nie, N. H. (2001). Sociability, interpersonal relations, and the Internet: Reconciling conflicting findings. American Behavioral Scientist, 45, 420-435.

Nie, N. H., & Erbring, L. (2000). Internet and Society: A Preliminary Report. Retrieved March 17, 2000, from http://www.stanford.edu/group/siqss/Press_Release/Preliminary_Report-4-21.pdf

Nielsen Media Research (2001). Time spent viewing. Retrieved February, 12, 2002, from: http://www.tvb.org/tvfacts/index.htm

Parker, E. B. (1961). Television and the process of cultural change. Journalism Quarterly, 38, 39-48.

Parker, E. B. (1963). The effects of television on public library circulation. Public Opinion Quarterly, 27, 578-589.

Papacharissi, Z., & Rubin, A. (2000). Predictors of Internet use. Journal of Broadcasting and Electronic Media, 44(2), 175-196.

Parker, B. J., & Plank, R. E. (2000). A uses and gratifications perspective on the Internet as a new information source. American Business Review, 18(2), 43-49.

Perse, E. M., & Dunn, D. G. (1998). The utility of home computers and media use: Implications of multimedia and connectivity. Journal of Broadcasting and Electronic Media, 42, 435-456.

Perse, E., M., & Ferguson, D. A. (2000). The benefits and costs of Web surfing. Communication Quarterly, 48, 343-359.

Pew Internet and American Life (2002). Getting serious online. Retrieved March 5, 2002, from http://www.pewinternet.org

Rogers, E. (1985). The diffusion of home computers among households in Silicon valley. Marriage and Family Review, 8, 89-101.

Robinson, J. P. (1969). Television and leisure time: Yesterday, today and (maybe) tomorrow. Public Opinion Quarterly, 33, 210-222.

Robinson, J. P., & Godbey, G. (1999). Time for Life: The Surprising Ways American Use Their Time (2nd ed.). University Park, PA: Pennsylvania State University Press.

Robinson, J. P., & Kestnbaum, M. (1999). The personal computer, culture, and other uses of free time. Social Science Computer Review, 17(2), 209-216.

Rogers, E. M. (1985). The diffusion of home computers among households in Silicon valley. Marriage and Family Review, 8, 89-101.

Rubin, A. M. (1983). Television Uses and gratifications: The interactions of viewing patterns and motivations. Journal of Broadcasting, 27(1), 37-51.

Schramm, W. (1973). Men, Messages and Media: A Look at Human Communication. New York: Harper & Row Publishers.

Schramm, W., Lyle, J., & Parker, E. B. (1961). Television in the Lives of Our Children. Stanford, CA: Stanford University Press.

Vitalari, N. P., Venkatesh, A., & Gronhaug, K. (1985). Computing in the home: Shifts in the time allocation patterns of households. Communication of the ACM, 28(5), 512-522.

Weiss, W. (1969). Effects of the mass media of communication. In G. Lindzey and E. Aronson (Eds.), The Handbook of Social Psychology, Vol. 5, (pp. 77-196). Reading, MA: Addison-Wesley Publishing Company.

Wellman, B., Haase, A. Q., Witte, J., & Hampton, K. (2001). Does the Internet increase, decrease, or supplement social capital? Social networks, participation, and community commitment. American Behavioral Scientist, 45, 436-455.

Table 1

Time shifts among traditional media

	Normal Day (minutes)	*Without computers for fun (minutes)*		*Without television (minutes)*	
Television	129	122	-7		
Offline computers	107	83	(-24)	120	+13
Online computers	125	38	(-87)	141	+16
VCR	29	31	+2	15	-14
Videogames	10	11	+1	7	-3
Movies	7	3	-4	5	-2
Radio	26	32	+6	43	+17
CDs	79	67	-12	90	+11
Newspapers	13	12	-1	16	+3
Magazines	10	7	-3	12	+2
Telephone	40	38	-2	45	+5
School books	45	55	+10	62	+17
Leisure books	12	6	-6	9	-3
Total Time	632	505	**-16**	565	**+62**

Saying "May Cause Internal Bleeding" with a Smile:

A Multi-Year Analysis and Comparison of Prescription Drug Advertising

Samuel D. Bradley
Doctoral student

Yongkuk Chung
Doctoral student

Leah M. Haverhals
Master's student

Annie Lang
Professor, director
(812) 855-5824
anlang@indiana.edu

Institute for Communication Research
Department of Telecommunications
Indiana University
Radio-TV Center
Bloomington, IN 47405

Revised: July 11, 2002

Running head: Prescription Drug Advertising

A paper presented to the Communication Theory and Methodology Division of the Association for Education in Journalism and Mass Communication at its annual conference, August 2002, Miami, Fla.

This research is partially supported by NIDA R01-DA12359-02.

Saying "May Cause Internal Bleeding" with a Smile:
A Multi-Year Analysis and Comparison of Prescription Drug Advertising

Abstract

Since restrictions were eased for broadcast prescription drug advertisements in 1997, there has been a dramatic spending increase on direct-to-consumer advertising. This paper addresses direct-to-consumer advertising by conducting two content analyses of 120 hours of television programming in 2000 and 2002, providing a description of frequency, production features, and emotional tone of information presented in health advertising. The results will be used to construct the stimuli for future experiments investigating how consumers process such information.

Saying "May Cause Internal Bleeding" with a Smile:

A Multi-Year Analysis and Comparison of Prescription Drug Advertising

Television is a major source of information for many Americans. In particular, older Americans are heavy viewers of television and rely heavily on television for information (Johnson & Cobb; Walgren, 1994; Rubin, 1986). Recent Nielsen numbers suggest that those older than 54 watch upward of 40 hours of television a week, more than any other group. Recent changes in the television environment have altered the menu of television available to viewers at all hours of the day and night. The greatly expanded number of channels which provide programming 24 hours a day, seven days a week, and the recent proliferation of 24-hour news and information channels means that television viewers have many more choices about what to watch. Television now provides a great deal and wide variety of all kinds of information. Of particular interest in this study is health information presented on television. In particular, we are interested in examining how much health information is a provided to television viewers through advertising for over-the-counter and prescription health remedies. Further, this study seeks to investigate what production and content features are being commonly used in this advertising in order to learn more about how television viewers may be processing that information.

Recently, a fair amount of research has begun to study how television viewers process information presented on television. In particular, recent research has looked at how the interaction of content and structure increases or decreases the probability that television viewers will learn the information being presented in both programming and advertising content (Grabe, Lang, Zhou, & Bolls, 2000; Grabe, Zhou, Lang, & Bolls, 1998; Lang, 2000; Lang, Bolls, & Kawahara, 1996; Lang, Bolls, Potter, & Kawahara, 1999; Lang, Newhagen, & Reeves, 1996;

Lang, Potter, & Bolls, 1999; Lang, Zhou, Schwartz, Bolls, & Potter, 2000). This research has used college students, middle-aged adults, older adults, and recently adolescents as subject populations. It has included advertising, prime-time programming, political advertising, and television news as stimulus materials. This research consistently shows that production elements in television have predictable and strong effects on viewers' ability to remember information presented on television. In addition, this research suggests that local structural features and emotional content within a single message can direct attention to certain elements of the message and direct attention away from other elements, rendering some parts of the message more memorable and other parts less memorable (Lang, 1995; Lang, 1993; A. Lang et al., 1996; Thorson & Lang, 1992).

This is particularly interesting given recent changes in the U.S. Food and Drug Administration's regulation of broadcast drug advertising. More and more, health information is being provided to television viewers through pharmaceutical company advertising. This increase in advertising for prescription drugs has implications for society as well as for individuals. Analysts suggest that part of the increase in prescription drug costs is due to the upsurge in television advertising for these products. As patients begin asking for a specific drug, by name, companies can charge more for that drug (Findlay, 2001). Further, as pharmaceutical companies become major buyers of advertising time, networks and stations may subtly alter their programming content to offer more health related information.

In 1997 the FDA eased restrictions on television and radio advertising for prescription drugs in an effort to provide more information about drug availability to consumers (AARP). The new regulations reduced the amount of risk and side effect information required in broadcast advertising for prescription drugs. Previous regulations required advertisements to include a "brief summary" of all important information about the advertised drug, including its side effects, contraindications, and effectiveness" (HHS News, P97-26, 1997). Given the time limitations of broadcast advertising, this made the practice essentially impossible. The new requirements simply require that broadcast ads contain truthful and non-misleading information about the product, that they contain a "major statement" prominently disclosing all of the major risks associated with the drug, and, in lieu of a brief summary, provide a mechanism to ensure that consumers can easily obtain full product labeling (e.g., a toll-free number, or Web site (HHS News, P97-26, 1997).

As a result of this change in the regulatory environment, there has been a dramatic increase in this type of advertising, called direct to consumer or DTC advertising. According to USA Today (USA Today, February 25, 2001) pharmaceutical companies spent more than $2 billion advertising prescription drugs to consumers in the year 2000, a 17% increase in spending compared to 1999. A recent study in the New England Journal of Medicine showed that direct-to-consumer advertising spending tripled from 1996 to 2000 (Rosenthal, Berndt, Donohue, Frank, & Epstein, 2002). Evidence suggests that the best-selling prescription drugs are also those that are the most heavily advertised.

What is not clear is whether this increase in broadcast advertising is good for consumers or bad for consumers. Little is known about whether these ads are serving to provide needed information about medical conditions and products to consumers that they might otherwise not receive or if these ads simply serve to "popularize" certain drugs without increasing knowledge. Both critics and supporters of direct-to-consumer drug advertising exist. Supporters claim that DTC advertising serves two primary functions: a) it informs consumers that (possibly new) treatments exist for various conditions, and; b) it can also inform consumers that a particular symptom or health problem may have a treatable cause. In addition, others argue that DTC advertising can make consumers aware of alternative (new) drugs to the ones being prescribed for them by their physician which may have fewer or different side effects. Critics, on the other hand, argue that the company with a financial stake in selling the drug is not the best source of information about a drug. The purpose of the advertisement is to sell drugs and increase profits, not to inform consumers or promote the best possible healthcare option. In addition, DTC can cause problems in the physician/patient relationship if the patient insists on receiving specific drugs they saw in an advertisement but are not appropriate or best for their condition.

Unfortunately, most of this support and/or criticism is not based on any real data about how people react to, process, or store direct-to-consumer prescription drug advertisements. A survey by the Medical Economics magazine reported that 90% of physicians surveyed described DTC ads as unbalanced, and 70% said they had been pressured by a patient to prescribe a drug they had seen advertised. A survey examining the impact of print DTC advertising done by the AARP showed that most consumers "did not notice or take away key information in the advertising"(http://research.aarp.org/health/2000_04_advertising_1.htm). However, three-quarters felt the advertising could help them to talk to their doctors.

In the academic literature, there is, to date, very little research on the effects or effectiveness of DTC prescription drug advertising. Davis (2000) studied the effects of completeness of the "risk statement" (i.e., the statement describing drug-associated side effects) on consumers' perceptions of a drug's safety and appeal. He found a strong negative relationship between completeness and perceptions of the drug's safety and efficacy. Drugs with less complete risk statements were perceived much more positively than those with more complete risk statements. In another study, Bell, Wilkes, and Kravitz (1999) did a phone survey to investigate patients' probable reactions to their doctors if they were to deny an advertisement-motivated drug request. Results showed that 46% of respondents said they would be disappointed if that were to occur. Five percent anticipated resorting to persuasion or trying to get the prescription elsewhere. A surprising 15% would consider terminating their relationships with their physician. Respondents who anticipated negative reactions were also more likely to have lower satisfaction with their current physician, to rate DTC advertising more favorably, and possessed more confidence in the government's regulation of DTC advertising.

This latter is an interesting finding since there is no pre-approval process for DTC advertising, nor does the FDA monitor DTC advertising. Rather, if a complaint is filed, the FDA will investigate the complaint and, if it is valid, send a warning letter to the responsible pharmaceutical company. But, in general, there is no serious oversight or enforcement mechanism for these regulations. Should the company ignore the warning letter, no specific enforcement measures are specified.

Two other academic studies on the effects of drug advertising were found. Both of these studies, however, looked at advertising for over-the-counter drugs. In one study, Burak and Damico (2000) surveyed 471 college students. They found that the majority of students used at least one advertised medication and that these students did not discuss either the condition they were using the drug to treat, or the drug itself with their physicians. In the second study (Tsao, 1997), the content of 150 television over-the-counter drug commercials was analyzed. Results showed that the advertising strategy is focused on consumer awareness of the product and the brand, not on the information content of the ad. According to the authors, educational commitment "did not seem to be blended into the promotional efforts for OTC drugs."

Given the large and continuing increase in DTC advertising and the relative lack of information about the positive or negative effects of DTC advertising on consumers, it seems imperative that we learn more about both the overall content and structure of these advertisements. It is also important to study their effects on consumers' perceptions, health-related knowledge, and health-related decision making.

The initial aim of this study is to provide a description of the frequency, production features, and emotional tone of health and drug related information presented in health advertising. In addition, given recent popular press accounts of the increased money being spent on DTC advertising, this study examines whether there has been a decrease in health-related advertising since the surge from 1996 to 2000. To do this, two content analyses, first a secondary content analysis of a portion of an existing national sample of television programming and second, a recently collected local sample of television programming were performed. This content analysis will provide us with a better understanding of the amount and type of health related advertising being shown on television. The results of this content analysis will then be used to construct the stimuli for future experiments investigating how consumers process televised health information.

Given these concerns, our initial questions were about simple frequency and placement. How many advertisements for health related products appear on television? What time of day are they most prevalent? Is there more or less health related advertising being aired in the year 2002 than there was in the year 2000? How long are the ads? Is there a difference in the placement, frequency, or number of advertisements for over-the-counter products compared to prescription products?

Our second set of questions relates to the structural features and emotional content being used in the production of these advertisements. Research has clearly shown that production pacing and emotional content have strong and interactive effects on television viewers' ability to pay attention to and remember the contents of television messages (Bolls, Potter, & Lang, 2002; Detenber & Reeves, 1996; Friestad & Thorson, 1985; Lang, 1990, 1991; Lang, Bolls et al., 1999; Lang, Dhillon, & Dong, 1995; A. Lang et al., 1996; Newhagen & Reeves, 1991; Reeves, Lang, Thorson, & Rothschild, 1989; Thorson & Friestad, 1984). A future goal of the research begun here is to investigate how these features are being used in health-related advertising to elicit attention and to increase or decrease the allocation of resources to processing different aspects of the advertising messages. In other words, are structure and emotion being used to increase processing of the benefits of advertising while decreasing processing of side effects, warnings, and other educational-type information? Thus, the set of questions is related to asking what types of emotional content are being used in these advertisements. Are these ads primarily positive, primarily negative, or a combination of the two? Are these messages primarily fast- or slow-paced?

In order to answer these questions, we performed the following content analyses of two samples. In addition to the completed analyses, further analyses are planned on these data. In addition to global pacing, the pacing will be analyzed to determine whether pacing changes during the course of the message. Pacing during side effects and warnings also will be coded.

One of the primary requirements of the relaxed regulations for prescription drug advertising is that ads clearly inform consumers where they can find out more information about the drug. Is this pointer to either a Web site or a toll-free number presented in such a way as to be noticeable or memorable? What types of appeals are commonly being used in this advertising? How much of the information is informational and how much is executional?

Methodology

Sample.

To examine the prevalence and characteristics of advertising for health care products, a constructed week sample of weekday programming was randomly drawn during the broadcast month of February 2002, a Nielsen sweeps month. For each weekday, one hour of programming was taken from the morning and evening dayparts. Prime time programming was doubly sampled (i.e., two hours per day) because of the dramatic increase in viewership during prime time. Four networks were selected for this analysis, two cable and two broadcast. The broadcast networks ABC and CBS were selected because recent ratings information suggests that these networks have the highest share of older American viewers. For cable, CNN was chosen because of its high share of older viewers, and Lifetime was added to try to capture any advertising aimed predominantly at women. Twenty hours were sampled from each network, for a total of 80 hours.

An additional analysis was performed on an existing sample collected from February to July 2000 (Gantz & Schwartz, 2002). In order to facilitate comparisons to the 2002 sample, a similar sub-sample was drawn from the existing sample. Ten hours were sampled from each network in the same proportion per daypart as the 2002 sample, for a total of 40 hours. Because the existing sample did not include the Lifetime network or any other network with an equivalent viewership, TNT was substituted because of its broad audience demographics.

Units of Analysis. The units of analysis in the present study were: (1) each 30-minute block of programming in each sample, and (2) each television commercial included in the sample. Each commercial was initially judged as to whether it advertised a health-care product. If the commercial was not health care-related, it was not analyzed.

Direct to Consumer. All commercials were coded as either over-the-counter or direct-to-consumer. For the majority of commercials, this was easily accomplished by brand name. When there was any question, the company's Web site or toll-free number was consulted. All discrepancies were resolved in this manner. If the advertised product required a doctor's prescription, it was coded as direct-to-consumer, otherwise it was over-the-counter.

Descriptives. Each commercial and 30-minute programming block were coded for whether it appeared in morning, afternoon, or prime-time programming. Each unit of analysis was also coded for time, date, day-of-week, and network.

Duration. The exact duration was noted for each commercial using professional JVC broadcast editing equipment. Commercials in the sample were either 10-, 15-, 20-, 30-, 45-, or 60-seconds.

Pacing. Each commercial was rated for its overall pacing (Lang et al., 1999). Commercials were rated as either slow (fewer than 5 cuts and edits per 30 seconds), medium (5-10 cuts and edits per 30 seconds), or fast (more than 10 cuts and edits per 30 seconds).

Arousal. Commercials were rated in terms of global arousal (Lang et al., 1995). Arousal is one of the dimensions of emotion cited in multi-dimensional theories of emotion (Lang, 1985; Lang, Bradley, & Cuthbert, 1990). Arousal was coded accordingly, and messages were rated as belonging to one of four ordinal categories: very calm, calm, slightly arousing, or arousing.

Valence. Commercials were rated on a scale ranging from -3 for extremely negative messages to +3 for extremely positive messages.

Major statements. Each DTC commercial in the 2002 sample was coded for whether it contained a major statement and the duration of the major statement in seconds.

Referrals. Each DTC commercial in the 2002 sample also was coded for the types of referrals present (e.g., magazine, Web site, or toll-free number) and in which channel (i.e., audio or visual) the referral was presented.

Coders. Three communication graduate students were trained as coders. After the coders examined a small portion of the sample, ambiguities and disagreements were discussed, and the coding guide was further refined before the sample was coded. The entire sample has been fully coded by at least one coder. From this, a randomly selected 30 % of the sample was recoded by multiple coders to calculate inter-coder reliability. Disagreements were resolved by discussion.

Results

Within this sample of 120 hours of programming, there were 309 commercials for health-care products. Of these, 193 (62.5%) were for over-the-counter products, and 116 (37.5%) were for direct-to-consumer products. Although there were far more OTC commercials, they were also significantly shorter (M = 22.0 sec.) than DTC commercials (M = 46.6 sec., $t\,(307) = 16.5, p < .001$). See Table 1.

Table 1. Frequency of direct-to-consumer and over-the-counter commercials by duration.

Seconds	DTC	OTC
10	0	17
15	13	82
20	0	2
30	31	90
45	5	1
60	66	1
90	1	0
Total	116	193

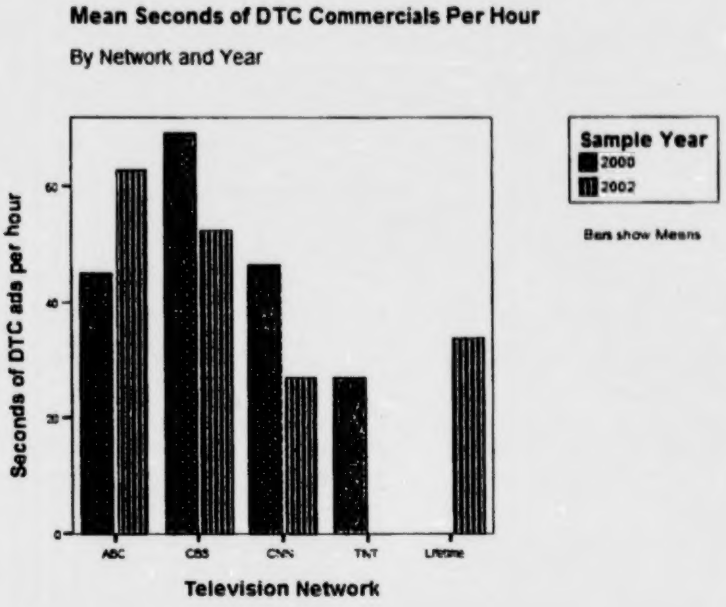
Across both samples, there was an average of .96 DTC commercials per hour, or 45 seconds of direct-to-consumer advertising per hour. For over-the-counter advertising, there was an average of 1.6 commercials per hour. Because of the shorter average duration of OTC commercials, there are actually fewer seconds of OTC advertising ($M = 35.4$ seconds per hour). This difference is marginally significant ($t\,[239] = 1.91, p = .058$).

When comparing the 2002 and 2000 content analyses, there has not been a significant change in frequency of direct-to-consumer advertisements in terms of number per hour ($M = .88$

vs. 1.12, *t* [238] = 1.47, *p* = ns) or seconds per hour (*M* = 46.9 vs. 44.1, *t* [238] = -.70, *p* = ns). There also was no difference in frequency or seconds per hour of OTC advertising (both *p*s > .4). Despite the three-fold surge in spending from 1996 to 2000 on DTC advertising, there has been no significant decrease in spending during the past two years. See Figure 1.

In the national 2000 sample from which our sub-sample was drawn, the four networks examined here averaged 12 minutes, 47 seconds of advertising per hour across the entire sample. Using that as a baseline, approximately 5.7% of all commercial advertising on four networks was for direct-to-consumer prescription drugs. For comparison, OTC advertising represented 4.4% of all advertising in terms of duration.

Figure 1. Mean number of seconds of DTC commercials per hour.



BEST COPY AVAILABLE

The placement of DTC advertising has changed during the past two years, as revealed by a Daypart x Year Analysis of Variance, F (2, 234) = 3.02, $p = .05$. The number of DTC commercials per hour has sharply decreased in morning and afternoon programming, but increased in prime time, where the most viewers are. Conversely, the placement of OTC ads did not change from 2000 to 2002, F (2, 234) = 2.47, p = ns. Over-the-counter commercials and direct-to-consumer commercial did not differ in terms of their distribution by daypart, $\chi^2 = 4.381$, df = 2, p = ns. That is, both types of commercials appeared in similar proportions across dayparts.

Because TNT was substituted for Lifetime in the 2000 sample, it was of interest whether there was any difference among networks in the number of DTC and OTC commercials. There were no differences found among the five networks, $\chi^2 = 0.744$, df = 4, p = ns, for the two types of commercials. Likewise, TNT and Lifetime did not significantly differ in number or number of seconds for either OTC or DTC advertising (all $ps > .33$).

For the analyses of the commercials themselves, there were some differences in the way the two types of health-care products are advertised. DTC commercials are significantly longer than OTC commercials; in fact, on average they are about twice the length, $M = 47$ sec. vs. 22 sec., t (307) = 14.67, $p < .001$. This explains why there are so many more OTC ads than DTC ads, yet direct-to-consumer advertising makes up a greater percentage of overall advertising by time.

The two types of commercials differ significantly but slightly in terms of overall valence. Inter-coder reliability for the valence measure was marginal, Cohen's kappa = .73. Over-the-counter product advertising appeared to be slightly more positive on the 7-point scale ranging from -3 to +3 than DTC commercials, $M = .025$ vs. 002, F (1, 307) 4.06, $p < .01$. As can be seen in Table 2, a greater percentage of DTC ads had negative valence. The two types of commercials did not differ in global pacing, with the majority of both types employing medium pacing, $\chi^2 =$

1.33, df = 2, p = ns. See Table 3. Inter-coder reliability for the pacing measure was marginal, Cohen's kappa = .58.

Table 2. Percentage of direct-to-consumer and over-the-counter commercials by valence.

Valence	DTC	OTC
-3	0 0%	0 0%
-2	12 10.3%	2 1.0%
-1	25 26.1%	29 15.0%
0	35 30.2%	91 47.2%
+1	37 31.9%	62 32.1%
+2	7 6.0%	7 3.6%
+3	0 0%	2 1.0%
Total	116 100%	193

Table 3. Frequency of direct-to-consumer and over-the-counter commercials by level of pacing.

Seconds	DTC	OTC
Slow	30 25.9%	55 28.5%
Medium	69 59.5%	118 61.1%
Fast	17 14.7%	20 10.4%
Total	116	193

Inter-coder reliability for the arousal measure also was marginal, Cohen's kappa = .55.

Direct-to-consumer commercials showed a higher proportion of slightly arousing messages than did over-the-counter commercials. See Table 4. This difference was significant, $\chi^2 = 11.80$, df = 3, $p < .01$. Whereas the two message types were similar, the DTC ads were more likely to be arousing than over-the-counter ads.

There was a significant correlation between global pacing and global arousal for DTC ads $r = .23$, $p < .01$), such that slow-paced messages were less arousing, and fast-paced messages were more arousing. The expected values also showed a significant difference from observed values in the same trend ($\chi^2 = 20.55$, df = 6, $p < .01$). Over-the-counter ads show the same trend ($\chi^2 = 45.51$, df = 6, $p < .001$). Accordingly, it appears all heath-care advertisements make arousing messages more fast-paced and calm messages more slow-paced. This supports the general premise of this line of research investigating formal features and consumer processing of prescription drug advertising.

Table 4. Percentage of direct-to-consumer and over-the-counter commercials by global arousal.

Arousal	DTC	OTC
Very calm	7 6.0%	20 10.4%
Calm	65 56.0%	133 68.9%
Slightly arousing	43 37.1%	38 19.7%
Arousing	1 0.9%	2 1.0%
Total	116	193

In terms of major statements, 80.7% of the direct-to-consumers ads in the 2002 sample contained a major statement. All of the ads that were 60 seconds or longer contained a major statement. A further examination of all of the ads that did not contain a major statement showed that if an ad did not contain a major statement, it made no claims about the benefits of the product – most did not even mention the affliction the drug would treat – and all referred patients to ask their doctors for more information. Because of the marginal reliability of the pacing measure, all of the DTC ads in the 2002 sample were re-coded by a trained coder. Every edit and cut was counted, and the edits and cuts were counted separately for the major statement. Local pacing during the major statement did not differ from global pacing, $F(1,49) = 1.68$, $p = .21$. The duration of the major statement was just less than one third of the total commercial length, averaging 30.8% of total time.

In examining the referrals, most of the commercials referred patients to all three sources: a magazine, a Web site, and a toll-free number. In total, 92.3% of the DTC ads referred patients to a Web site, 92.3% referred patients to a toll-free number, and 76.9% referred patients to a magazine advertisement. The vast majority of these referrals were presented in the visual channel. Every referral given was presented as on-screen text. For the toll-free numbers, 1.9% were also presented in the audio channel, for the Web sites, 1.3% also were spoken, and non of the magazine referrals were announced. It appears that the mandated referrals are being given, but they are predominantly only displayed as on-screen text.

Discussion

Advertisements for prescription drugs have gone from a baseline of zero just five years ago to now accounting for 5.7% of television advertising. This trend is part of a massive upsurge in spending that began even before regulations on prescription drug advertisements were relaxed. From 1996 to 2000, overall spending on prescription drug advertising tripled. In comparing samples taken two years apart, these data provide no evidence for any kind of decrease in the spending on television. On average, every hour of programming contains approximately 1 minute of direct-to-consumer advertising. Accordingly, the average television viewer is being exposed to several of these messages every day.

Although studies have looked at the economic impact of this advertising, little is know about the impact of these ads on consumer preferences, attitudes, or their relationships with physicians. What is clear, however, is that these direct-to-consumer ads are not the same as ads for other health care advertisements. On average, they are twice the length of their over-the-counter counterparts. Part of this may be attributable to the required warnings in these messages, but the warnings hardly take up half the time of the total message.

Unlike the placement of over-the-counter ads, there was a change in placement of direct-to-consumer advertisements. They have decreased in both morning and afternoon programming, but are more often being seen in prime time, where audiences dwarf those of the other dayparts. But although the overall frequency of these ads has remained constant over the past two years in terms of both time and number, their shift to prime-time may have significantly increased overall exposure of these advertisements to the TV viewing audience.

More important than duration, perhaps, is that the direct-to-consumer ads differ in some fundamental aspects. Although there was no change in pacing, these messages were significantly more likely to be rated as using an arousing format as opposed to a calm format. Likewise, these messages were more likely to be rated as having a negative overall valence than OTC ads. These commercials have not been examined in the laboratory, so it is impossible to speak directly to the effects they will have on consumer processing. When combined with what is known about how televised messages are processed, it is clear that further research is needed.

There are many ways in which DTC ads might have differed from over-the-counter, but the advertisements in this sampled differed systematically in two ways that suggest they will change the way consumers process the messages. Both negative messages and arousing messages have been shown to affect television processing (Lang, Dhillon, & Dong, 1995; Lang, Newhagen,

& Reeves, 1996) , and these messages vary on exactly those two dimensions.

Although these global differences suggest that differences may be found in what is remembered and what is forgotten among these messages, the local analysis may prove even more insightful. Because these production features can be manipulated further at the local level to guide attention strategically throughout the message, these global differences may be exacerbated at the local level. The initial examination of local pacing during the major statement suggests that pacing is not manipulated to be faster during the major statement. The results of this study suggest another possibility, however. The vast majority of all referrals are presented as on-screen text, and fewer than 2% are spoken by the announcer. In addition, most all of these referrals are presented during the major statement. During the two most important parts of the advertisement, consumers are hearing and seeing different information. Given the finding that even mild audio-visual dissonance can overload the television viewer's capacity (Grimes, 1991), this suggests that the major statement and referrals are competing with one another for limited capacity. Encoding of one will likely come at the expense of the other.

These direct-to-consumer advertisements have quickly become a major player in the health-care advertising industry. In addition to shaping the way viewers process information contained in the ad, these ads may be changing the economics of the industry and the ways in which patients interact with their physicians. It remains to be seen whether this kind of advertising will have positive or negative effects. In the meantime, the burgeoning industry needs to be better understood.

References

Bolls, P., Potter, R. F., & Lang, A. (2002). The effects of message valence and listener arousal on attention, memory, and facial muscular responses to radio advertisements. Communication Research, 28, 627-651.

Detenber, B. H., & Reeves, B. (1996). A bio-informational theory of emotion: Motion and image size effects on viewers. Journal of Communication, 46(3), 66-84.

Findlay, S. D. (2001). Direct-to-Consumer promotion of prescription drugs: Economic implications for patients, payers, and producers. Pharmacoeconomics, 19(2), 109-119.

Friestad, M., & Thorson, E. (1985). The role of emotion in memory for television commercials.

Gantz, W., & Schwartz, N. (2002). Shouting to be heard: Public service advertising in a new media age. Menlo Park, CA: Henry J. Kaiser Family Foundation. Grabe, M. E., Lang, A., Zhou, S., & Bolls, P. D. (2000). Cognitive access to negatively arousing news: An experimental investigation of the knowledge gap. Communication Research, 27(1), 3-26.

Grabe, M. E., Zhou, S., Lang, A., & Bolls, P. (1998). The effects of tabloid and standard television news on viewer evaluations, memory and arousal. Paper presented at the Association for Education in Journalism and Mass Communication, Annual Conference, Baltimore, MD.

Grimes, T. (1991). Mild auditory-visual dissonance in television news may exceed viewer attentional capacity. Human Communication Research, 18(2), 268-298.

Johnson, R. L., & Cobb Walgren, C. J. (1994). Aging and the problem of television clutter. Journal of Advertising Research, 34(4), 54-62.

Lang, A. (1990). Involuntary attention and physiological arousal evoked by structural features and emotional content in TV commercials. Communication Research, 17(3), 275-299.

Lang, A. (1991). Emotion, formal features, and memory for televised political advertisements, Biocca, Frank (Ed). (1991). Television and political advertising, Vol. 1: Psychological processes; Vol. 2: Signs, codes, and images. (pp. 221 243). Hillsdale, NJ: Erlbaum.

Lang, A. (1995). Defining audio/video redundancy from a limited-capacity information processing perspective. Communication Research, 22(1), 86-115.

Lang, A. (2000). The limited capacity model of mediated message processing. Journal of Communication, 50(1), 46-70.

Lang, A., Bolls, P., & Kawahara, K. (1996). The effects of arousing content and production pacing on television viewers' arousal and allocation of processing resources. Paper presented at the Midwest Artificial Intelligence and Cognitive Science Conference, http:www.cs.indiana.edu/event/maics96/proceedings.html.

Lang, A., Bolls, P., Potter, R. F., & Kawahara, K. (1999). The effects of production pacing and arousing content on the information processing of television messages. Journal of Broadcasting and Electronic Media, 43(4), 451-475.

Lang, A., Dhillon, K., & Dong, Q. (1995). The effects of emotional arousal and valence on television viewers' cognitive capacity and memory. Journal of Broadcasting and Electronic Media, 39(3), 313-327.

Lang, A., Geiger, S., Strickwerda, M., and Sumner J. (1993). The effects of related and unrelated cuts on viewers' memory for television: A limited capacity theory of television viewing. Communication Research, 20, 4-29.

Lang, A., Newhagen, J., & Reeves, B. (1996). Negative video as structure: Emotion, attention, capacity, and memory. Journal of Broadcasting and Electronic Media, 40(4), 460-477.

Lang, A., Potter, R. F., & Bolls, P. D. (1999). Something for nothing: Is visual encoding automatic? Media Psychology, 1(2), 145-163.

Lang, A., Zhou, S., Schwartz, N., Bolls, P. D., & Potter, R. F. (2000). The effects of edits on arousal, attention, and memory for television messages: When an edit is an edit can and edit be too much? Journal of Broadcasting and Electronic Media, 44(1), 94-109.

Lang, P. J. (1985). The cognitive psychophysiology of emotion: Fear and anxiety. In A. Tuma & J. Maser (Eds.), Anxiety and the anxiety disorders (pp. 131-170). Hillsdale, N.J.: Erlbaum.

Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (1990). Emotion, attention, and the startle reflex. Psychological Review, 97, 377-395.

Newhagen, J. E., & Reeves, B. (1991). Emotion and memory responses for negative political advertising: A study of television commercials used in the 1988 presidential election (Vol. Volume 1: Psychological Processes, pp. 197-220). Hillsdale, NJ: Lawrence Erlbaum.

Reeves, B., Lang, A., Thorson, T., & Rothschild, M. (1989). Emotional Television Scenes and Hemispheric Specialization. Human Communication Research, 15(4), 493-509.

Rosenthal, M. B., Berndt, E. R., Donohue, J. M., Frank, R. G., & Epstein, A. M. (2002). Promotion of prescription drugs to consumers. New England Journal of Medicine, 346(7), 498-505.

Rubin, A. M. (1986). Television, aging and information seeking. Language and Communication, 6(1-2), 125-137.

Thorson, E., & Friestad, M. (1984). Emotion and the recall of television commercials., 7-8.

Thorson, E., & Lang, A. (1992). The effects of television videographics and lecture familiarity on adult cardiac orienting responses and memory. Communication Research, 19(3), 346-369.

Effects of Text and Animated Graphics in Television News Stories on Viewer Evaluations, Arousal, Attention, and Memory

Julia R. Fox, Assistant Professor
Department of Telecommunications
(812) 855-9935
jurfox@indiana.edu

Yongkuk Chung, Graduate Student
Department of Telecommunications

Seungwhan Lee, Graduate Student
Department of Telecommunications

Nancy Schwartz, Doctoral Candidate
Instructional Systems Technology
School of Education

Leah Haverhals, Graduate Student
Department of Telecommunications

Zheng Wang, Graduate Student
Department of Telecommunications

Annie Lang, Professor
Department of Telecommunications

Institute for Communication Research
Indiana University
1229 E. 7th St.
Bloomington, IN 47405-5501

and

Deborah Potter, Executive Director
NewsLab

revised July 9, 2002

Paper presented to the Communication Theory and Methodology Division of the Association for Education in Journalism and Mass Communication for possible inclusion at the 2002 convention

This research is partially supported by NIDA R01-Da12359-02

Running Head: News Graphics

Effects of Text and Animated Graphics in Television News Stories on Viewer Evaluations, Arousal, Attention, and Memory

This study examines effects of text and animated graphics in television news stories. Text and animated graphics aided recognition for stories participants rated harder to understand, but made no difference for easier stories. Delayed cued recall was best for stories with animated graphics and worst for stories with no graphics. Participants paid less attention to text graphics than to animated graphics or the no-graphics condition. Arousal and evaluations of the news stories are also examined.

Effects of Text and Animated Graphics in Television News Stories on Viewer Evaluations, Arousal, Attention, and Memory

In the increasingly competitive business climate of television news, producers are constantly looking for ways to capture and hold viewers' attention and to improve viewers' evaluations of their product. At the same time, because so many Americans say they rely on television for news and information (Bannon, 1998; Hinckley, 1997), another important goal for television news producers is to find ways to help viewers understand and remember information presented on television news. Using a limited capacity model of mediated message processing, this study examines how text and animated graphics affect viewer attention, memory, and responses to science-related television news stories.

The limited capacity model of mediated message processing defines viewers as information processors and defines the television medium as a variably redundant ongoing stream of audio and video information. The task of viewing television is defined as the allocation of processing resources to the parallel sub-processes of encoding, storage, and retrieval. The more thoroughly a message is processed, the more of its informational content is encoded, stored in memory, and available for later retrieval. The thoroughness of processing is dependent on three factors: 1) the resources required to process the message; 2) the resources allocated by the viewer to processing the message; and 3) the relationship between those two.

Resources required to process the message depend upon both the structure and content of a message. Both the structure and the content of the message can be complex and difficult to process or they can be simple and easy to process. Structural complexity is primarily determined by producers who can introduce multiple structural features into messages at a fast or slow rate of occurrence. Content difficulty is determined both by producers and by characteristics of the viewer. Certain topics may be more difficult to process than others. For example, difficult content requires more resources than easy content (Thorson & Lang, 1992). In addition, complex syntax (Thorson, Reeves, & Schleuder, 1985; Thorson, 1985, 1986), non-chronological narrative (Lang, 1989), and nonredundant audio and video (Lang, 1995) are all examples of content features which have been shown to increase the difficulty of a message and therefore the resources required to process the message.

Thus, messages require a certain level of resources to be relatively thoroughly processed. However, viewers may or may not allocate sufficient resources to thoroughly process a message. Resources are allocated as a result of both controlled and automatic processes. Controlled resource allocation processes are primarily overt, conscious, and related to the goals, motivations and interests of the viewer. Thus, a viewer who is trying to learn information, is interested in the topic, or finds the message personally relevant will allocate more resources to the message than one who is just trying to pass the time or be entertained.

In addition to controlled allocation of resources there are also mechanisms which automatically allocate resources to messages. In general, these automatic resource allocation mechanisms are under the control of the stimulus. One such mechanism is the orienting response. Orienting responses are automatic, reflexive attentional responses to changes in the environment or to stimuli that people have learned signal important information. In television, ORs are elicited by structural features like cuts, edits, movement, flashes of light, and sound (Lang, 1990; Lang, Geiger, Strickwerda, & Sumner, 1993; Reeves, Thorson, Rothschild, MacDonald, Hirsch, & Goldstein, 1985; Thorson & Lang, 1992) and content features such as emotion or arousing content (Lang, Dhillon, & Dong, 1995; Lang, Newhagen, & Reeves, 1997; Newhagen & Reeves, 1992).

The third factor which plays into how thoroughly a message is processed is the relationship between the resources required and the resources allocated. If a message requires few resources to be processed but many are allocated to the task, the message will be thoroughly processed. On the other hand, if a message requires many resources to be thoroughly processed but the viewer allocates only a few, then there will be insufficient resources available to process the message and the message will be poorly processed. Messages can also be poorly processed when a message requires more resources than a viewer is able to allocate. This occurs because viewers are limited capacity processors. In other words, there is an upper bound to the number of resources that viewers have available to allocate to television viewing. When a message requires more resources to be processed than the viewer has, processing will suffer. This situation is called processing or cognitive overload.

Research using the limited capacity model has demonstrated that people's processing capacity is regularly overloaded by television messages (Lang, 1995; Lang, Bolls, Potter, & Kawahara, 1999; Lang, Dhillon, & Dong, 1995; Lang, Geiger, Strickwerda, & Sumner, 1993; Lang, Zhou, Schwartz, Bolls, & Potter, 2000). Television messages contain a great deal of information. Some of that information is central to the message and some of it is peripheral. Extracting the important central information from a message and maintaining it in working memory in order to understand the message is a relatively simple task for experienced television viewers. However, a great deal of the rest of the information contained in a message is never encoded, stored or remembered. For example, after viewing a commercial for a prescription pain reliever most viewers' will successfully extract the main points of the message: it was a commercial, for a pain reliever, ask your doctor. Viewers' who expend more effort will remember more details; perhaps the name of the drug, how it works, or something about its possible side effects. But no matter how hard a viewer tries to remember the message they will still, generally, be unable to remember the exact words and phrases in the audio track and details about the people, places, and things on screen during the message. When television viewers are instructed to remember as much as possible from a message (a difficult television viewing task), variations in the resources required by the message quickly provide evidence of processing overload.

The limited capacity approach posits that resources are allocated separately to the sub-processes of encoding, storage, and retrieval. In general, because watching television is a real-time task, many resources are allocated to encoding the message. Both automatic and controlled processes work together to allocate resources to the process of selecting important information from the message and creating mental representations of the message in the viewer's working memory.

However, encoding the message is only a piece of thorough processing. In order for a viewer to learn the information in a message and have it available for later use, that information must not only be encoded, it also must be stored. How well a message is stored directly affects the probability that it can be retrieved at a later date. When the structural and content features of television combine to automatically allocate large portions of processing resources to encoding, often too few resources remain to be allocated to storage. When this occurs, viewers encode a great deal of information but end up with very little of it stored in memory despite the fact that they may have attended closely to the message and even enjoyed it ((Lang, Bolls et al., 1999; Lang, Newhagen, & Reeves, 1996; Lang, Potter, & Bolls, 1999; Lang et al., 2000)).

In addition to providing a theoretical perspective, the limited capacity model of mediated message processing also provides an experimental paradigm for measuring the processes, sub-processes, and mechanisms included in the model. The research leading to this operational model is reviewed in a recent article by Lang (2000). Based on this research the model posits that the concepts included in the model can be measured as follows: Orienting responses are indexed by short-term decelerations in heart rate; viewer arousal is measured by self-reported arousal and increases in spontaneous skin conductance activity; long-term effort or resource allocation is indexed by a long-term deceleratory trend in the heart rate data; the sub-process of encoding is measured using recognition measures; the sub-process of storage is indexed by cued recall; the sub-process of retrieval is measured through free recall protocols; and resource allocation, though often inferred, can be measured using secondary task reaction time procedures.

In this study, we look at the ability of two different kinds of graphics (redundant text and animated graphics) to increase arousal and attention to the message, decrease the processing resources required to process the message, and as a result, improve both encoding (recognition), storage (cued recall), and retrieval (free recall). In order to do this, we had television viewers watch seven news stories that contained either no graphics, a redundant text graphic, or an animated graphic. During viewing their physiological responses were measured. Following viewing we measured recognition memory for the stories. Some 2-7 days later, we called viewers and asked them to recall and describe the stories they had seen in the experiment.

Our first hypothesis was that adding graphics to news stories would increase attention to the news stories. We measured attention by looking at tonic heart rate. A sustained deceleration in heart rate for the duration of the stimulus presentation indicates sustained mental effort (Lang, 1994). In addition, we thought it possible that the animated graphic would elicit greater attention than the redundant graphic because of the presence of movement in the animation. Previous research has shown that motion elicits sustained attention throughout its duration, as indicated by electrical activity in the brain measured with electroencephalogram (EEG) responses (Reeves and Nass, 1996). Thus:

> HI: News stories with animated graphics will elicit slower heart rate (during the graphics) than news stories with redundant graphics, which will elicit slower heart rate than news stories without graphics.

In addition to effects on attention to messages, content and structural features of media messages can also affect physiological arousal experienced in response to television messages. For example, extremely pleasant or unpleasant sounds (Bradley and Lang, 2000), color (Detenber, Simons, and Reiss, 2000), fast-paced cuts and edits (Lang, Schwartz, and Snyder, 1999), and motion (Detenber, Simons, and Bennett, 1998) have all been found to increase the physiological arousal viewers experience while watching television, as indicated by skin conductance activity during the message presentation. Similarly, this study predicts that an animated graphic in television news stories will affect physiological arousal in viewers:

H2: Animated graphics will elicit higher levels of skin conductance than redundant graphics, which will elicit higher levels of skin conductance than no graphics.

When the structural features of a television presentation draw attention to media messages and increase viewer arousal this results in additional resources being allocated to encoding the message. Many different structural features have been shown to increase message encoding as indexed by recognition; examples include emotionally arousing images and sounds (Bradley and Lang, 2000), emotional message content (Lang, Dhillon, and Dong, 1995), related cuts and edits (Lang, 2000), motion (Reeves and Nass, 1996), and larger screen size (Reeves and Nass, 1996). In general, this increase in resource allocation results in an increase in recognition memory for the message providing the processing resources required by the content and structural features of the message do not overload cognitive capacity (Lang, 2000; Lang, Potter, & Bolls, 1999). On the other hand, when messages are difficult, even simple structural features (e.g. unrelated cuts and video graphics) have been shown to result in at least momentary decreases in recognition indicative of cognitive overload ((Lang, 1991; Lang, 1993; Lang et al., 2000; Thorson & Lang, 1992)). In this study, half of the stories were rated as being difficult and half were rated as being easy. Thus, it is predicted that for the easy stories the addition of video graphics will increase recognition for information contained in the news story (compared to stories without graphics). On the other hand, the addition of graphics to difficult stories will result in a smaller increase in recognition for the information contained in the story. However, it is expected that the addition of graphics to the difficult stories will still result in an increase in memory for information contained in the story because the graphics are completely redundant with the verbal content (Drew & Grimes, 1987; Grimes, 1990, 1991; Lang, 1995; Reese, 1984; Son, Reese, & Davie, 1987), and due to the relatively cost-free nature of visual processing (Lang, Potter, & Bolls, 1999) the addition of the graphics should reduce the processing resources required by the message. Thus:

H3: Recognition for audio information presented during the graphics will be greater than recognition for the same audio information presented without graphics. This effect will be smaller for difficult stories compared to easy stories.

H3a: Recognition of audio information will be better for easy stories compared to harder stories.

Furthermore, if, as predicted above, graphics increase arousal for news stories, this should result in an additional automatic allocation of resources to storing the message. Better storage of the message should result in better free and cued recall for the stories and the information contained in the stories. Thus:

H4: Delayed free and cued recall of stories will be greater for stories with animated graphics than for stories with redundant text graphics, and delayed free and cued recall of stories with redundant text graphics will be greater than recall of stories with no graphics.

H4a: Delayed free and cued recall will be better for easy stories compared to harder stories.

Finally, content and structural features can also influence viewer evaluations of television messages. For example, color images are rated more positively than black and white (Detenber, Simons, and Reiss, 2000); video segments with high fidelity are rated as more likable and more realistic than video segments with low fidelity audio (Reeves and Nass, 1996); video segments viewed on a larger screen receive higher ratings for speed of movement, enjoyment of movement, greater sense of physical movement, and excitement of scene than did those viewed on a smaller screen (Lombard et al., 2000; Reeves and Nass, 1996); camera angle can influence product evaluations in advertisements (Meyers-Levy and Peracchio, 1992); point of view/subjective camera framing can make video segments more enjoyable and make viewers feel more drawn in than can objective camera framing (Orton, Reeves, Leshner, and Nass, 1995); and fast-paced political ads elicit better candidate evaluations than slow-paced ads (Reeves and Nass, 1996). As many structural elements elicit more favorable viewer responses, this study predicts:

H5 Versions of news stories with graphics will be rated as more comprehensible and more involving than those without graphics.

Methods

Design

This experiment is a mixed Graphics (3) X Difficulty (2) X Order (6) factorial design.

Graphics and difficulty are within subjects factors while order is a between subjects factor. Graphics has three levels: no graphics, redundant text graphic, and animated graphic. The order factor represented the six different presentation orders. Subjects were randomly assigned to one of the six presentation orders.

Stimulus materials

Seven stories were used in this experiment. Among them, six were test stimuli (tornado resistant housing, faulty tires, earthquakes, breast cancer, ALS/Lou Gehrig's Disease, and beat the heat), with another story (lightning) always placed as the first story in any order, as a practice story for the study participants to familiarize themselves with the experimental situation. The stories ranged in length from 50 seconds to about 3 and a half minutes. The original versions of the stories, provided to NewsLab by Knight Ridder Tribune's News in Motion division, used animated graphics. Producers at NewsLab, a television news laboratory in Washington, DC, affiliated with the Project for Excellence in Journalism, removed all the station identification logos from the original news stories and created the no graphics and redundant text graphics versions of each story by editing video or a redundant text graphic into the part of the original version that originally contained the animated graphic. The audio and remaining visuals for each version were identical. Thus 21 news stories were created, with three versions (no graphic, animated graphic, or redundant text graphic) for each of the seven different topics.

Six orders of presentation were constructed in blocks of seven news stories (one version of each of the seven topics). The seven stories in each block contained the practice story plus two stimulus stories from each graphic level. The stories comprising each block were randomly ordered with the constraint that every story topic appeared in each condition and that no two story topics or treatment types were always in the same order, except for the story about lightning, which was used as the practice story and thus appeared as the first story in each of the six order presentations.

Dependent variables

Both evaluative self-report measures and physiological measures were employed in this study.

News Story Evaluations

A questionnaire was designed to access the participants' evaluations of the news stories. The participants were asked to finish the questionnaire immediately after viewing each story. There were seven questions asking how informative, believable, interesting, enjoyable, engaging, important, and hard to understand the stories were. The questions were measured on ten-point semantic differential scales (not at all informative/very informative, not at all believable/very believable, not at all interesting/very interesting, not at all hard to understand/very hard to understand, not at all enjoyable/very enjoyable, not at all engaging/very engaging, not at all important/very important).

The hard to understand, not at all hard to understand scale was used to create the Difficulty factor. Average ratings for each story across conditions on this variable were rank ordered and the three stories ranked hardest to understand were classified as difficult and the three stories ranked least hard to understand were classified as easy. The main effect of Difficulty on the hard to understand scale was significant (F (1, 58) = 59.46, p <.000, epsilon-squared = .45). The three easy stories were rated with the mean of 8.54, while the three hard stories received a mean rating of 7.06 where ten was equal to very easy to understand and one was equal to hard to understand.

Attention

Heart rate (HR) was used to index attention. Participants' HR data were collected when viewing the news stories. A significant slowing of heart rate will occur if high attention to an external stimulus occurs. Previous studies (e.g.Lang, 1990; Lang, 1994; Lang, Bolls, Potter, & Kawahara, 1999; Lang, Newhagen and Reeves, 1996) have displayed the reliability of this measurement for attention to external stimuli such as television messages.

HR data were collected as milliseconds between beats and averaged over five-second periods. Participants' HR data were collected during the five seconds baseline and the first 60 seconds of each story. A time factor that represents the 12 five-second periods over which the heart rate data were collected was analyzed. HR data were collected by placing three Beckman mini Ag-AgCI electrodes on participants' forearms, with two electrodes being placed on each forearm and a third ground electrode being placed above the wrist. HR data were analyzed over time because there could be fluctuation of attention over the course of a news story. Also, this allowed for comparison of the HR data during the time of the graphic presentation in the news stories.

Arousal

Arousal was measured by skin conductance responses (SCRs) .(Hopkins & fletcher, 1994)). A skin conductance response is an increase in skin conductance level of at least 0.5 micro siemens. Because the activation of the sympathetic nervous system makes sweat glands more active and causes the skin conductance to increase, both greater SCRs frequency and amplitude indicate a greater sympathetic nervous activation increase, which is a measure of arousal

(Cacioppo & Tassinary, 1990; Grabe, Zhou, Lang, & Bolls, 2000; Hopkins & Fletcher, 1994; Stern Ray, & Quigley, 2001). Skin conductance was gathered with a pair of standard Beckman Ag-AgCl electrodes, which were placed on the palm of the participant's non-dominant hand. Both the frequency of spontaneous SCRs and the amplitude of the largest SCR were coded and analyzed.

Memory measures

There were two memory measures used in the experiment: recognition and delayed free recall. Recognition was measured by using 63 four-alternative multiple choice questions about information from the audio messages in the news stories, with each story topic having nine questions. In five of the stories, three questions were created before, three during, and three after the graphic element appeared on the screen. One story had no after situation as the graphic was presented at the end of the story, so there were five questions before and four questions during the time the graphic element appeared on the screen. The recognition memory test was run on Medialab software. Participants sat at a computer and were asked to click on the correct response for each question. They also were asked to enter a number to illustrate how confident they were in their response on a scale of 0 to 100 percent, although that data is not reported here.

To measure delayed recall, participants were called approximately two to seven days after participating and asked what stories they remembered seeing, and from those stories what visual imagery they recalled seeing on the screen as they viewed the stories. The participants were then reminded of the stories they did not freely recall and were asked what visual imagery they could recall seeing on the screen from those stories. The number of stories recalled independently and the rank order in which they were recalled was coded, as well as the number of graphical, text, and visual elements participants recalled.

Two delayed recall indices were created from the delayed recall data. The first index, called the cued recall index, was created by summing the three cued recall prompt questions. This cued recall index functions as an indicator of storage. The second delayed recall index was created by summing the responses to the two free recall questions (list the stories you remember seeing and tell us what you saw). This index is called the free recall index and serves as a measure of retrieval.

Apparatus

The experiment was controlled by a 386 computer running VPM experimental control software. The physiological signals were passed from the electrodes to Coulbourne couplers. The heart rate signal was passed through a bioamplifier to a bipolar comparator connected to a one-shot, and finally, into a computer which measured the milliseconds between heart beats. Skin conductance was collected using a Coulbourne skin conductance module and was sampled at 50 Hz.

Participants

Participants were 61 undergraduate students at a large Midwestern university. Extra class credit was given in return for their participation.

Procedure

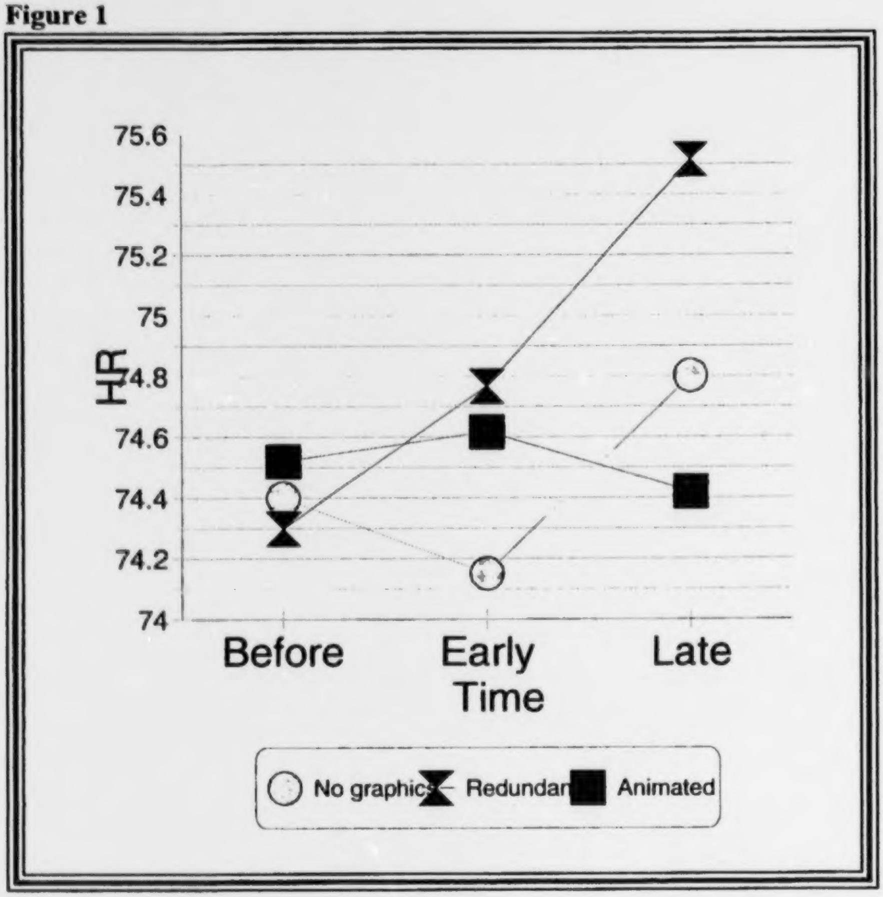
Participants were greeted by an experimenter and asked to sign a consent form. After signing the form, participants were seated in front of a television monitor and sensors used for measuring heart rate and skin conductance were attached to their forearms and non-dominant hand. Participants were asked to watch the television monitor in front of them. They were told that television news stories that are seen on television would appear on the screen. They were told to watch the news stories the entire time they were on the screen. Participants viewed seven science-related news stories, six being used in the analysis and one being a practice story. Each participant saw one version (animated graphic, redundant text graphic, or no graphic) of each of the seven different topics, so that each participant saw each topic. All participants saw the practice story plus two of the topics with no graphics, two of the topics with animated graphics, and two of the topics with redundant text graphics, so that each participant saw stories in each condition. Participants were randomly assigned to one of the six presentation orders.

Participants' heart rate and skin conductance were measured while the participants were watching the stories. Following each story the tape was stopped and participants rated the stories using the seven, ten-point evaluation questions. After all seven stories were viewed participants were disconnected from the sensors and performed either an unrelated television task, an unrelated Web-based task, or in some cases both tasks. Following those tasks, participants sat at a computer and, using MediaLab software, answered the 63 recognition questions about the stories. After participants completed this task, they were thanked and dismissed. Approximately two to seven days later, participants were called and asked to list the topics of as many stories as they could remember seeing, and then asked what visual images they remembered seeing on the screen while viewing those stories. The subjects were then reminded of the stories they did not freely recall and were asked what they recalled seeing on the screen while viewing those stories.

Results

Hypothesis 1

Figure 1



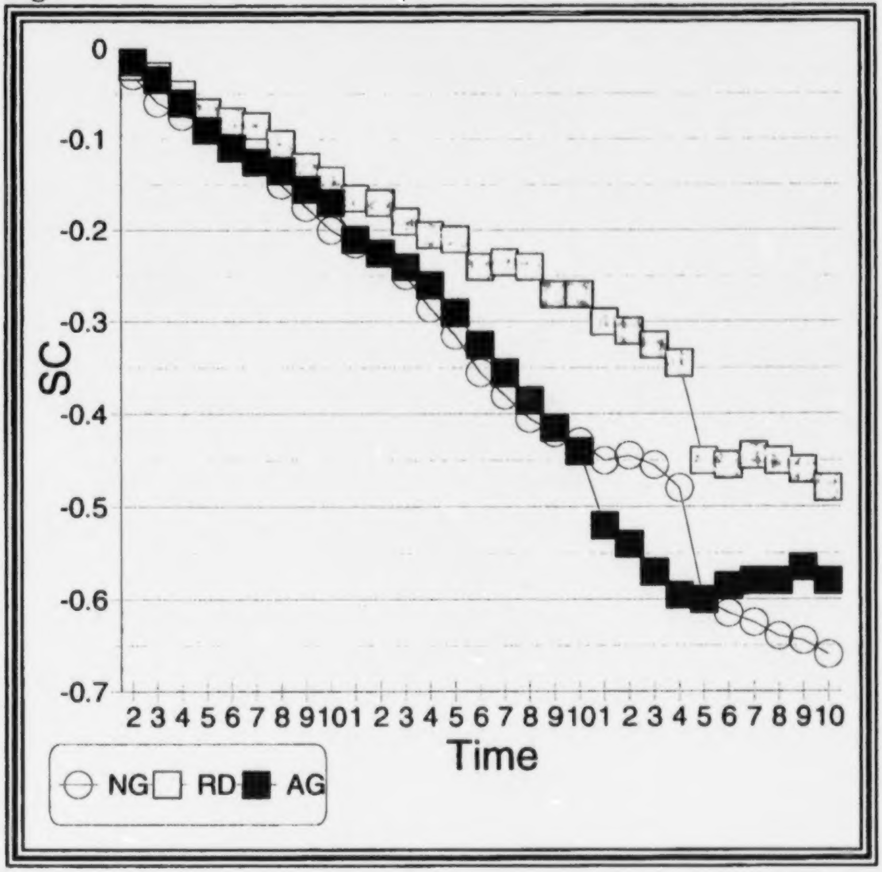
News Graphics

This hypothesis predicted that viewers would pay more attention to stories with graphics, in particular stories with animated graphics, than they would to stories without graphics. As a result, the prediction is for slower tonic heart rate during viewing. This prediction was tested by the Graphics X Time interaction on the heart rate data. This interaction was significant (F (18, 972) = 2.53, p <.000) and is shown in Figure 1. As can be seen in figure, there is little difference in heart rate before the onset of the graphic. For redundant graphics, heart rate increases steadily over the course of the graphic indicative of less attention being paid to the message. For no graphic, there is a slight decrease and then a slight increase in attention being paid to the message. For animated graphics, there is a slight decrease followed by a slight increase in attention paid to the message. Further examination shows that, on average, viewers paid equal amounts of attention to no graphics and animated graphics, but paid much less attention to redundant text graphics.

Hypothesis 2

This hypothesis predicted that viewers would have higher skin conductance for animated

Figure 2



graphics compared to redundant graphics, and that they would have higher skin conductance for redundant graphics compared to no graphics. Because skin conductance was measured over time, and the graphics unfold over time, this prediction is also tested by the Graphics X Time interaction on the tonic skin conductance data. This interaction is significant (F(38, 2090) = 3.25, p <.000) and is shown in Figure 2. Again, there is no variation in skin conductance between the different versions of the stories for 9 seconds preceding the onset of the graphics. Onset of the graphic occurs at the first 10 on the X axis. At this point, skin conductance begins to diverge. Skin conductance remained high for the redundant text graphic condition, but there's no difference between the animated graphics and the no graphic condition. Offset of the graphic occurs at the second 10 on the X axis. During the 10 seconds which follows the offset of the graphic, no graphic and animated graphic diverge, with skin conductance data higher for versions which contained animated graphics than for versions which contained no graphics. These data suggest that though subjects pay less attention (as indicated by heart rate) to redundant graphics, the redundant graphics still elicited more arousal. On the other hand, subjects paid more attention to the no graphic and animated graphic versions (as indicated by heart rate), but those versions elicited less arousal.

Hypothesis 3

This hypothesis predicted that recognition for audio information presented during the graphics would be greater than recognition for the same audio information presented without graphics and that this effect would vary with difficulty. A corollary hypothesis predicted that recognition would be better for easy stories than it was for harder stories. Recognition scores were computed for information presented before the onset of the graphic and during the onset of the graphic. Using

Figure 3

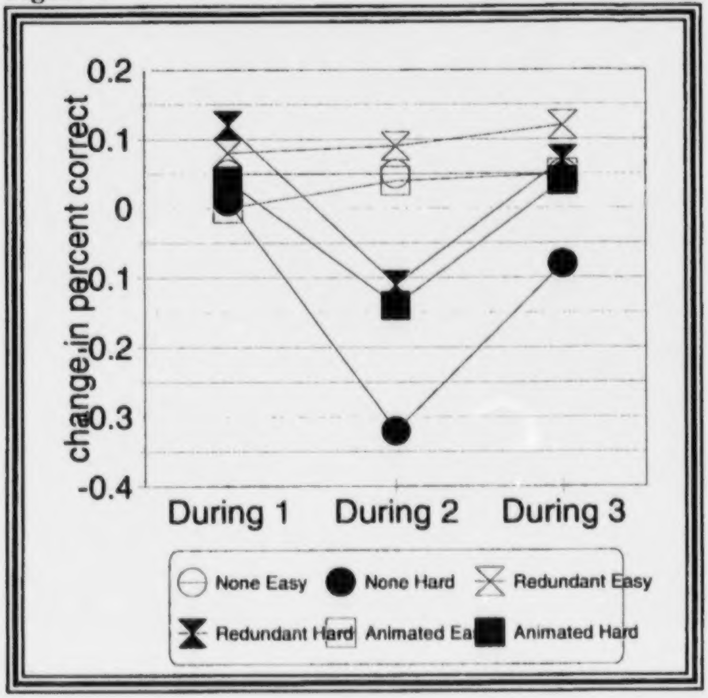
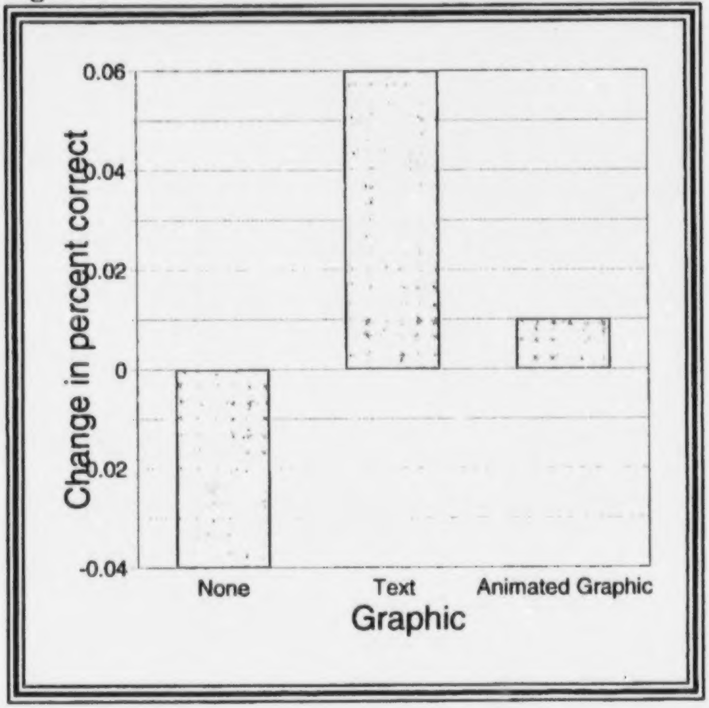


Figure 4



the before value as a baseline, change in recognition scores were computed for the information presented during the first third of the graphic, the middle third of the graphic, and the final third of the graphic. As expected, the main effect for difficulty was significant (F 1: 58) = 7.80, p <.007, epsilon-squared = .087). Overall, respondents recognition memory decreased 4 percent during graphics presented in harder stories while their recognition memory increased 6 percent during graphics presented in easy stories. In addition, as expected there was a main effect for Graphics (F (2, 116) = 3.26, p <.042, epsilon-squared = .029). As expected, recognition was worse for no graphics, followed by animated graphics, followed by redundant text graphics. This effect is shown in Figure 3. Finally, there was a significant Difficulty by Time interaction (F= (2, 116) = 14.58, p <.000, epsilon-squared = .17) which is shown in Figure 4. As can be seen in this figure, graphics have virtually no effect on recognition for information presented during the graphic when stories are easy. However, when stories are harder, both animated graphics and redundant text graphics compared to no graphic improve recognition memory for information presented during the graphic.

Hypothesis 4

This hypothesis predicted that delayed recall would be greater for animated graphics stories, followed by redundant graphics stories, followed by stories with no graphics. First, it was expected that both cued and free recall would be better for easy stories compared to harder stories. The main effect of Difficulty on the cued recall index (F(1,58) = 7.50, p <.008, epsilon-squared = .09) and the free recall index (F (1,58) = 81.56, p <.000, epsilon-squared = .56) were significant .For both indices respondents remembered more information from easy stories (cued recall index = .46; free recall index = 3.90) compared to harder stories (cued recall index = .35;

free recall index = 2.84).

For cued recall, the main effects for Graphics was significant (F (2, 116) = 47.74, p <.000, epsilon-squared = .397). As expected, respondents had the greatest cued recall for animated graphics (.67) followed by redundant graphics (.34) followed by no graphics (.20). For free recall, neither the Graphics nor the Graphics X Difficulty interaction was significant.

Hypothesis 5

This hypothesis predicted that viewers would rate news stories more positively if they contained graphics. The index was created by summing across the six evaluation scales (enjoyment, engaging, informative, believable, interesting, important). The prediction was for a main effect for Graphics. The main effect for Graphics only approached significance (F (2, 116) = 1.75, p <.17) with viewers evaluating no graphic (6.64) and animated graphic (6.63) stories more positively than redundant text graphics (6.34) stories.

Discussion

Participants paid less attention to text graphics than to animated graphics or the no-graphics condition. Though participants paid less attention, as indicated by heart rate, to the redundant text graphics, the redundant text graphics still elicited more arousal. On the other hand, participants paid more attention to the no graphic and animated graphic versions, as indicated by heart rate, but those versions elicited less arousal. Text and animated graphics aided recognition for stories participants rated harder to understand, but made no difference for recognition of information from easier stories. Delayed cued recall was best for stories with animated graphics and worst for stories with no graphics.

The results have both theoretical and practical implications. From a theoretical standpoint, the results are in line with a limited capacity model of mediated message processing. When the message content was easy, the graphic structural component did not aid recognition, probably because sufficient resources were already available to encode the easier stories without the aid of any structural features. However, for the harder stories the addition of the graphic structural component aided recognition. This indicates that the combination of harder content and graphic structure did not overload the processing capacity. This makes sense, as the "harder" stories were still rated fairly easy to understand in an absolute sense (the easy stories had a mean of 8.54 on a 10-point scale, with 1 being very hard to understand and 10 being not at all hard to understand, whereas the harder stories had a mean of 7.06 – significantly more difficult than the easy stories in a comparative sense, but still not hard to understand in an absolute sense). Rather, the graphics seem to enhance encoding of the harder stories, resulting in better recognition than for the harder stories without graphics. For harder stories with text graphics, the information on the screen was redundant with the information in the audio message, thus resulting in a deeper, more elaborate encoding of the same information from two different channels. For the animated graphics, the visuals illustrated the audio information, and the movement in the animated graphics elicited more attention to the message, thus bringing more processing resources to encoding the information. It is worth noting that the stories did not have to be particularly hard to understand in an absolute sense to benefit from the use of graphics in aiding recognition. It is, however, possible that stories rated hard to understand in an absolute sense might not benefit in the same manner, as the combination of difficult content and the added structural component might result in an overload of processing capacity.

In addition to encoding more information from the animated graphics stories, participants also appear to have stored more information from those stories, as indicated by the greater amount of information recalled from the animated graphics stories. Again, this indicates there was no processing overload from the animated graphics, but rather the animated graphics aided the overall processing of the television news stories.

That animated graphics can enhance how much information people remember from science-related television news stories is important for those concerned with enhancing the way people learn information from television news – presumably both scholars and media practitioners. Both should also be interested in the findings that animated graphics increase viewer attention compared to either text graphics or no graphics. For theorists, it is another example of a structural component, or formal feature, of a mediated message eliciting attention to the message. For news producers, the technique of animated graphics offers a way to keep viewers watching their stories. In other words, the use of animated graphics is a technique that can help with ratings and better inform viewers. Overall, the use of animated graphics, at least in science-related television news stories, appears to be worth a station's investment in terms of both time to prepare the graphics and money to purchase the necessary equipment.

References

Bannon, T. (1998, December 20). News. Chicago Tribune. Chicago: section 2, page 1.

Bradley, M., & Lang, P. (2000). Affective reactions to acoustic stimuli. Psychophysiology, 37(2), 204-215.

Cacioppo, J. T., & Tassinary, L. G. (1990). Principles of psychophysiology: Physical, social, and inferential elements. New York: Cambridge University Press.

Detenber, B., Simons, R., & Bennett, G. (1998). Roll 'em: The effects of picture motion on emotional responses. Journal of Broadcasting and Electronic Media, 42, 113-127.

Detenber, B., Simons, R., & Reiss, J. (2000). The emotional significance of color in television presentations. Media Psychology, 2(4), 331-355.

Drew, D.& Grimes, T. (1987). Audio-visual redundancy and TV news recall. Communication Research, 14(4), 452-461

Grabe, M. E., Lang A., Zhou, S. & Bolls, P. D. (2000). Cognitive access to negatively arousing news: An experimental investigation of the knowledge gap. Communication Research, 27(1), 3-26

Grimes, T. (1990). Encoding TV news messages into memory. Journalism Quarterly, 67(4), 757-766.

Grimes, T. (1991). Mild auditory-visual dissonance in television news may exceed viewer attentional capacity. Human Communication Research, 18(2), 268-298.

Hinckley, D. (1997, May 29). Survey says: TV news & ads aces. New York Daily News, Television Section.

Hopkins, R., & Fletcher, J. E. (1994). Electrodermal Measurement: particularly effective for forecasting message influence on sales appeal. In A. Lang (Ed.), Measuring Psychological Responses to Media Messages (pp. 113-132). Hillsdale, NJ: Lawrence Erlbaum Assoc.

Lang, A. (1989). Effects of chronological presentation of information on processing and memory for broadcast news. Journal of Broadcasting and Electronic Media, 33(4), 441-452.

Lang, A. (1990). Involuntary attention and physiological arousal evoked by structural features and mild emotion in TV commercials. Communication Research, 17(3), 275-299.

Lang, A. (1991). Emotion, formal features, and memory for televised political advertisements, Biocca, Frank (Ed). (1991). Television and political advertising, Vol. 1: Psychological processes; Vol. 2: Signs, codes, and images. (pp. 221 243). Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc; Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.

Lang, A. (1994). What can heart rate tell us about thinking? In A. Lang (Ed.) Measuring psychological responses to media messages (99-111). Hillsdale, NJ: Lawrence Erlbaum Associates.

Lang, A. (1995). Defining audio/video redundancy from a limited-capacity information processing perspective. Communication Research, 22(1), 86-115.

Lang, A. (2000). The limited capacity model of mediated message processing. Journal of Communication, 50(1), 46-70.

Lang, A., Bolls, P., Potter, R. F., & Kawahara, K. (1999). The effects of production pacing and arousing content on the information processing of television messages. Journal of Broadcasting and Electronic Media, 43(4), 451-475.

Lang, Dhillon, & Dong. (1995). The effects of emotional arousal and valence on television viewers' cognitive capacity and memory. Journal of Broadcasting & Electronic Media, 39, 313-327.

Lang, A., Geiger, S., Strickwerda, M., & Sumner, J. (1993). The effects of related and unrelated cuts on television viewers' attention, processing capacity, and memory. Communication Research, 20(1), 4-29.

Lang, A., Geiger, S., Strickwerda, M., and Sumner J. (1993). The effects of related and unrelated cuts on viewers' memory for television: A limited capacity theory of television viewing. Communication Research, 20, 4-29.

Lang, A., Newhagen, J., & Reeves, B. (1996). Negative video as structure: Emotion, attention, capacity, and memory. Journal of Broadcasting and Electronic Media, 40(4), 460-477.

Lang, A., Potter, R., & Bolls, P. (1999). Something for nothing: Is visual encoding automatic? Media Psychology, 1(2), 145-163.

Lang, A., Schwartz, N., & Snyder, J. (1999). Slow down, you're moving too fast: pacing, arousing content, and middle-age. Paper presented to the Theory and Methodology Division at the annual conference of the Association for Education in Journalism and Mass Communication, New Orleans, LA. Coursepack pp. 325-341.

Lang, A., Zhou, S., Schwartz, N., Bolls, P. D., & Potter, R. F. (2000). The effects of edits on arousal, attention, and memory for television messages: When an edit is an edit can and edit be too much? Journal of Broadcasting and Electronic Media, 44(1), 94-109.

Meyers-Levy, J., & Peracchio, L. (1992). Getting an angle in advertising: The effect of camera angle on production evaluations. Journal of Marketing Research, 29, 454-461.

Orton, P., Reeves, B., Leshner, G., & Nass, C. (1995). Effects of subjective camera angle (POV) and negatively-valenced footage. Paper presented to the Visual Communication Division at the annual conference of the International Communication Association, Albuquerque, NM.

Reese, S. (1984). Visual-verbal redundancy effects on television news learning. Journal of Broadcasting, 28(1), 79-87.

Reeves, B., & Nass, C. 1996. The media equation: How people treat computers, television, and new media like real people and places. Cambridge University Press.

Reeves, B., Thorson, E., and Schleuder, J. (1986). Attention to television: Psychological theories and chronometric measures. In J. Bryand and D. Zillmann (Eds.), Perspectives on media effects. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Son, J.; Reese, S. & Davie, W. (1987). Effects of visual-verbal redundancy and recaps on television news learning. Journal of Broadcasting and Electronic Media, 31(2), 207-216.

Stern, Robert, William Ray, and Karen Quigley 2001 Psychophysiological Recording, 2nd ed. New York: Oxford University Press.

Thorson, E., & Lang, A. (1992). The effects of television videographics and lecture familiarity on adult cardiac orienting responses and memory. Communication Research, 19(3), 346-369.

Thorson, E., Reeves, B., & Schleuder, J. (1985). Message complexity and attention to television. Communication Research, 12, 427-454.

Thorson, E., Reeves, B. & Schleuder, J. (1985). Message complexity and attention to television. Communication Research, 12, 427-454.

Thorson, E., Reeves, B. & Schleuder, J. (1986). Attention to local and global complexity in television messages. In M. L. McLaughlin (Ed.), Communication Yearbook 10. Beverly Hills, CA: Sage.

THEORY OF COMMUNICATION OUTLETS AND FREE EXPRESSION:

A humanocentric exploration

(Revised on June 6, 2002)

Shelton A. Gunaratne

Mass Communications Department

Minnesota State University Moorhead

1104 Seventh Ave. S.

Moorhead, MN 56563

Tel. (218) 236-4035

Fax (218) 236-2168

gunarat@mnstate.edu

Shelton Gunaratne (Ph.D., University of Minnesota, 1972) is a professor of mass communications at Minnesota State University Moorhead. His recent research has focused on interpreting mass communication phenomena through the lens of the world system theory. He is the editor and lead author of the *Handbook of the Media in Asia* (Sage, 2000).

Paper presented to the Communication Theory and Methodology Division of the Association for Education in Journalism and Mass Communication at the AEJMC Convention in Miami Beach, Fla., Aug. 7-10, 2002.

THEORY OF COMMUNICATION OUTLETS AND FREE EXPRESSION:

A humanocentric exploration

Abstract / This essay combines the *yin-yang* complements of Chinese philosophy and the dialectic of Western philosophy to derive a humanocentric theory of communication outlets and free expression. It argues that the system of communication-outlets in most nation-states is situated between the extremes of libertarianism and authoritarianism. The meeting or clash of these two complements or antinomies at a particular point of time and space results in creating various shades of social responsibility. Cultural values determined these shades. In China, Confucianism, which provided the "middle path" of socially responsible behavior, stood between the extremes of the Daoists' libertarian tendencies and the Legalists' authoritarian tendencies. The essay also points out the major classical philosophies and theorists who contributed to the main concepts of the communication-outlets theory, which is applicable to all three levels of the world system: the world system as a single unit, the nation state, and the individual. Finally, the essay shows that some contemporary scholars have confused the systems of communication outlets with varying genres of journalism.

Keywords / authoritarianism, Eastern and Western philosophy, libertarianism, social responsibility, theory of communication outlets and free expression

[12,500 words]

This essay attempts to build a dynamic humanocentric theory of communication outlets and free expression based on concepts extracted from both Western and non-Western philosophy. Siebert, Peterson, and Schramm (1956) followed Western philosophy exclusively when they wrote the classic *Four theories of the press*. They developed a static normative theory of the press, by which they meant "all the media of mass communication" (p. 1), appropriate for their time. However, as Donohew and Palmgreen (1989) observe: "A theory comes into prominence when it is noticed and pursued by the scientific community, and it passes into history when better explanations are found" (p. 31). A theory should achieve the twin purposes of explanation and prediction[1] (Kerlinger, 1986). Moreover, as Kaplan (1964) suggests, a theory should "appear as the device for interpreting, criticizing, and unifying established laws, modifying them to fit data unanticipated in their formulation, and guiding the enterprise of discovering new and more powerful generalizations" (p. 295). This essay contends that the incorporation of established concepts and laws particularly evident in non-Western philosophy will help build a more universally applicable dynamic theory of communication outlets and free expression in comparison to the extant theories of the press.

Although Siebert, Peterson, and Schramm (1956) claimed that their book was "about the philosophical and political rationales or theories [that lay] behind the different kinds of press we have in the world today" (p. 2), their examination of those rationales or theories were vertical and separatist. Theirs was a Cold War-era typology (Braman, 2002). They drew their concepts only from Western philosophers and theorists, and yet tried to give the impression of universality to the theories they created as evident from their attempt to examine the degrees of press freedom in various non-Western countries (p. 31). Had they followed what historian Fletcher (1985) termed the horizontally integrative macrohistory approach by examining human philosophies across space and time, they would have found the concepts and laws to make their theories dynamic and more universally applicable.

To dissect the differences among the press systems [i.e., systems of communication outlets], Siebert, Peterson, and Schramm (1956) said one had to first examine the social systems in which the press [i.e., communication outlets] functioned. [The terms "press system" and "press theory" are restrictive because they tend to limit the scope and history of freedom of expression (speech) to the post-Gutenberg print press. This imparts a Eurocentric bias at the very outset. If our intent were to capture the freedom of expression available within broad social systems across time and space, better substitute terms would be "system of communication outlets" and "theories of communication outlets."[2] The term communication outlets would include all public modes of conveying news, information, and opinion at least from the first communication revolution, viz., the emergence of writing, onwards.] Furthermore, to determine the true relationship of the press to the social system, they said one had to look at certain basic beliefs and assumptions that the society held: the nature of man, the nature of society and the state, the relation of man to the state, and the nature of knowledge and truth. This meant, they argued, "in the last analysis the difference between press systems [was] one

---

[1] Prediction, however, presumes linear relations in a closed system. Far-from-equilibrium conditions associated with interdependent open systems, however, are prone to produce nonlinear outcomes, which defy prediction (Prigogine & Stengers, 1984). The best one could do is to estimate probabilistic outcomes.

[2] See Gunaratne (2002) for a critique of the concept of "press freedom" in current parlance.

of philosophy" (p. 2). Then they fell into the Weberian trap of Eurocentrism[3] and omitted the philosophical and political theories of the non-Western world. These pioneer mass communication gurus preceded the scholarship of the likes of Said (1978) and Amin (1989), who unraveled the distortions of Eurocentric discourse. In Amin's view, Eurocentrism, the roots of which go back only to the 19th century Renaissance, is a systematic and important distortion "from which the majority of dominant social theories and ideologies suffer" (pp. vii-viii).

The four theories were anchored solely on Western philosophical and political theory. Siebert, Peterson, and Schramm (1956) traced the authoritarian theory to Plato (427-347 B.C.E.), Machiavelli (1469-1527), Hobbes (1588-1679), Hegel (1770-1831), and Treitschke (1834-1896). They traced the libertarian theory to Milton (1608-1674), Locke (1632-1704), [Adam] Smith (1723-1790), Paine (1737-1809), Jefferson (1743-1826), Erskine (1750-1823), and Mill (1806-1873). They traced the social responsibility theory to the Commission on Freedom of the Press. They traced the Soviet communist theory of the press to Marx (1818-1883), Lenin (1870-1924), and Stalin (1879-1953). Thus the four theories they created to categorize the press systems of the world, not just the Western world, lacked the input of any non-Western philosophy.

King (1999) says the exclusion of non-Western theory is a reflection of the frequent claim in Western philosophical literature that "philosophy began with Thales"[4]

---

[3] Goonatilake (2001) writes: "The two grand theorists in sociology, Marx and Weber, both saw Asia as backward and static, as illustrated by Marx's residual category, the Asiatic mode of production, and Weber's rise of capitalism through Protestantism" (p. 5).

[4] Thales of Miletus (624-546 B.C.E.) was reputedly the first to explain the world in non-mythological terms. He believed that one original substance (water) formed all other substances in the world. He described the Earth as a flat disk floating in water.

(p. 8). Radhakrishnan (1952), however, points out that "philosophical speculations began earlier in India than in Greece" (p. 20) and that some of the earliest schools of Greek philosophy, specially the Orphic cult and the philosophy of Pythagoras (sixth century B.C.E.), show "a striking resemblance to Indian modes of thought" (p. 23). Pythagoras' view of the transmigration of the soul—that the soul exists as an immortal entity with the body simply as its temporary home; that on the death of one body it moves to another, and that through correct behavior the soul can move on to a happier existence (Freeman, 1996, pp. 146-7)—was quite similar to that of Indian philosophy. Goonatilake (1998) highlights the resemblance between Buddhist thought and Aristotle's doctrine of the mean, as well as Heraclitus' belief that everything is in a state of flux (pp. 28-29). King (1999) adds that attempts to construct a linear history of [Eurocentric] philosophy are "misleading because they portray the development of Western intellectual thought in a manner [that] 'papers over the cracks' and avoid ruptures, heterogeneities and discontinuities of Western cultural history" (p. 9). Moreover, he says, "Philosophy has tended to function as the handmaiden of European colonial dominance" (p. 9).

Winfield. Mizuno and Beaudoin (2000) criticize the critics of the four theories as well for looking at the world from a Western perspective without examining the historical philosophies of other civilizations. They point out that in the Far East "the philosophical tenets concerning the group, the hierarchy and truth" are indirectly linked with mass media and freedom of expression (p. 329).

In the light of the preceding introduction: First, this essay will outline the socio-political philosophy and theory of the ancient civilizations of China and India[5] to assist the uninitiated reader. Second, it will attempt to explore the elements needed to formulate a universally applicable dynamic theory of communication outlets and free expression (cf. Gunaratne, 2002), at the levels of the world system, the nation state, and the individual. The theory advanced in this essay makes no claim to be flawless. Its aim is to open up a new theoretical perspective so far overlooked by the mainstream communication scholars despite the decade-old debate on comparative communication theory (Carter, 1991; Dervin, 1991; Jacobson, 1991; Krippendorff, 1993; Pearce, 1991; Tehranian, 1991).

---

[5] Bahm (1995) identifies three major historical civilizations: the Chinese, the Indian, and the European (p. 45). He draws attention to two main sets of different emphases among them. The first relates to *will*: The

Tehranian (1991) wrote: "The challenge lies in developing comparative theories that consciously avoids … ethnocentric bias. We need to focus … on elements that appear to be both universal and immanent in most human societies" (p. 49). Wang and Shen (2000) asserted: "If theory-building is to be successful, all human histories, experiences, philosophies, cultural traditions and values relevant to theory formulation should be given due consideration in the process" (p. 29). Braman (2002) pointed out the need "to come up with an alternative typology of media systems that is comprehensive and complex enough to be able to cope with the great variety of media systems currently in existence and emerging" (p. 401). However, Dirlik (2000) has shown that "paradigms are not just innocuous models of explanation that guide intellectual work" for they are also "expressions of social ideologies" and power (p. 126). Thus, Eurocentric power and

---

West idealized willfulness, India will-lessness, and China willingness. The second relates to *reason*: The West idealized definiteness, India indefiniteness, and China naturalistic analogy (p. 20). This essay attempts to capture the essence of the philosophical and political rationales of the Chinese and the Indian civilizations to the extent they relate to theories of communication outlets and free expression. Space limitations prevent the elaboration of these complex philosophies in adequate detail. Siebert, Peterson and Schramm (1956) have presented the angle of the European civilization but with no reference to Judaism and Islam.

ideology associated with the dominant typologies or paradigms have prevailed over alternative explanations.

Chinese philosophy and theory

The classical period of Chinese philosophy dawned with the Eastern Zhou dynasty's late Spring and Autumn period (722-479 B.C.E.) and flourished during the Warring States period (479-221 B.C.E.). Commonly known as the period of the "hundred schools" of thought, it produced China's renowned philosophers: Confucius, Mo Di (Mozi), Mencius, Laozi (?), Zhuangzi, Shang Yang, Xunzi, Sunzi, and Han Fei. They formed three main schools of thought: the Legalists (*Fa Jia*), the Confucians (*Ru Jia*), and their opposites, the Daoists (*Dao Jia*). They formed two other schools—the Mohists (*Mo Jia*), and the Naturalists (*Yin-Yang Jia*) — but they, as well as the Legalists, subsequently disappeared into the mainstream philosophies. Scholars carved out a sixth school, the Logicians (*Ming Jia*), from among the mainstreams at a later stage.

The Legalists were the followers of Shang Yang (? - 338 B.C.E.), Shen Buhai (? - 337 B.C.E.), Shen Dao (350 - 275? B.C.E.), Han Fei (280? - 233 B.C.E.), and Li Si (? - 208 B.C.E.). Their ideas went back to those of the seventh-century B.C.E. statesman Guan Zhong, who worked to make Qi the strongest state of his time by increasing the power of the ruler. *Guanzi,* the text bearing his name, served as the earliest reference to issues such as law and order (De Bary & Bloom, 1999, p. 192). Devoted to the codification of law, the Legalists advocated an authoritarianism that came close to fascism. They were instrumental in replacing feudalism with the feudal-bureaucratic state. Rubin (1976) has shown resemblances between Legalism and Machiavellism. Both "freed the political actor from the need to observe the norms of morality and deemed all means acceptable in the struggle for power" (p. 62). However, unlike the Legalists, Machiavelli did not see despotic violence as an end in itself. The Legalists asserted that the people were a mere tool or raw material in the hands of the ruler. The Legalists' concept of law was devoid of all moral and religious sanctions. They stressed punishment and rewards as the two handles the ruler could use "to govern effectively and achieve power and authority" (p. 66). They argued that "a dull and ignorant population [was] a source of great strength" in contrast to the Confucians' push for education (p. 72). The Legalists represented the far "right" in political tendency while the Daoists represented the far "left." Siebert (in Siebert, Peterson & Schramm, 1956) traced the authoritarian theory to Plato who "idealized the aristocratic form of government" (p. 12), but neglected to mention Plato's East Asian contemporaries—Shang Yang and Shen Buhai—who expounded authoritarian views on the relation of man to the state.

Confucians were the followers of Confucius (552-479 B.C.E.), a.k.a. Kong Qiu Zhong-Ni. Mencius (c. 374-289 B.C.E.), a.k.a. Meng Ke, was one of his great followers. Xunzi (298-238? B.C.E.) was another. The Confucians propagated social justice within the framework of the feudal, or feudal bureaucratic, social order. Needham (1956) says their advocacy of freeing education from the barriers of privilege and social class was revolutionary because "it embodied some of the essential elements of modern democratic thought" (p. 7). They believed that the purpose of government was to bring about "the welfare and happiness of the whole people" through the "subtle administration of customs generally accepted as good and having the sanction of natural law" (pp.7-8). Birth, wealth or position had no necessary connection with the capacity to govern. The goal of Confucianism was "intellectual democracy" (p. 8). Government was to be paternalistic. The Confucians' picture of nature envisaged that "man is born for uprightness" (p. 12). Mencius "developed the democratic conception that the goodwill of the people was essential in government" (p. 16). Legge (1895) quotes Mencius thus: "The people are the most important element in a nation; … the sovereign is the lightest" (p. 483); and "Benevolence is the distinguishing characteristic of man" (p. 485). Confucians believed that knowledge was the beginning of action, and action the consummation of knowledge (Jung, 1999, p. 283). Another element of Confucianism is the doctrine of the mean (*Zhongyong*), traditionally ascribed to Zisi, the grandson of Confucius: "Let the states of equilibrium and harmony exist in perfection, and a happy order will prevail throughout heaven and earth, and all things will be nourished and flourish" (Legge, 1893, p. 385). Rubin (1976) points out that Confucians had understood the "idea of man as a harmonious and fully developed person" long before Renaissance humanism (p. 25). Xunzi, a humanist, viewed human culture as the noblest thing in the world.[6] Byun and Lee (2001) point out that Confucianism presents five key interrelated sets of foundational moral principles or insights collectively called "Five Constants": *in* (human-heartedness), *ui* (righteousness, proper character, and a principle of rationality), *ye* (rituals and ceremonies), *ji* (wisdom), and *shin* (trust). Although Confucianism included numerous elements linked to the ethos of social responsibility (e.g., emphasis on knowledge and education, intellectual democracy, natural law, and moral obligations), Peterson (in Siebert, Peterson and Schramm, 1956) thought of the social responsibility theory as essentially a Western construct born out of the "intellectual climate of the twentieth century" (p. 81). This conveys the incorrect impression that the notion of social responsibility originated as a reaction to the peculiar conditions of American communication outlets in the last century. Nuyen (2001) has pointed out that Confucianism placed "a supreme value on personal freedom and autonomy" (p. 70), as well as equality, within a horizontal and vertical structure of social responsibility very similar to the Western liberal tradition. Had Peterson examined the social responsibility of communication outlets within a Confucian framework as well, he could have developed a more humanocentric theory.

---

[6] The goal of Confucianism should not be confused with the misuse of the Confucian focus on harmony and cooperation by those in authority, e.g., the authoritarian-tending governments in the two Koreas and in China, particularly under Mao Zedong. In Japan, Confucianism enabled the emperor to command the intense loyalty of the people during World War II.

Daoists were the followers of Laozi (sixth–fifth century B.C.E.) and Zhuangzi (369-286 B.C.E.). Their insight into nature was comparable to pre-Aristotelian Greek thought. They rejected the feudal society and provided the basis for Chinese science. As Rubin (1976) explains, they "looked on society as evil and called on mankind to break loose from society's tenacious embrace, shake off the fetters of false duties and obligations, return to nature, and merge with the unsullied, simple, and genuine life of the universe" (p. 89). *Dao* meant *the way of man* (more precisely, the way of nature/universe that man should follow). Daoism, as Needham (1956) points out, was religious and poetical, as well as "strongly magical, scientific, democratic and politically revolutionary" (p. 35). Above all, the Daoists emphasized the unity of nature. They considered social "knowledge" valued by the Confucians and Legalists as rational but false. What they wished to acquire was knowledge of nature—"empirical, perhaps even liable to transcend human logic, but impersonal, universal and true" (p. 98). They opposed the feudal nobility and merchants alike, and they yearned for "some kind of primitive agrarian collectivism" (p. 100), an undifferentiated natural condition of life or pure primitive solidarity. Siebert (in Siebert, Peterson & Schramm, 1956), however, saw the libertarian theory too as essentially a modern Western construct born out of "the theological doctrines of early Christianity" on "the nature of knowledge and of truth" (p. 41). The salience of Daoism to libertarian theory escaped Siebert's mind.

The Mohists were the followers of Mo Di (c. 479-381 B.C.E.). They were chivalrous military pacifists who dabbled in scientific method. Needham (1956) says that although the earliest Mohists were interested in ethics, social life and religion, the later Mohists were more concerned with scientific logic, science and military technology (p. 166). The Mohists showed an ambiguous attitude toward feudal society. In certain places, they condemned primitive society or the state of nature, almost in anticipation of Hobbes' description in the *Leviathan*, as a war of each against all: "In the beginning of human life … each man had his own idea, two men had two different ideas, and ten men had ten different ideas …; so arose mutual disapproval among men …. The disorder in the human life could be compared to that among birds and beasts" (Mo Di cited in Needham, p. 166). However, elsewhere they adopted an attitude similar to that of Daoists (p. 167). Overall, they were not fundamentally against feudalism as such (p. 168). They were similar to the Confucians except for "their greater interest in all that would benefit the people" (p. 168). Rubin (1976) says this concept of Mohist "utilitarianism" is comparable to that of the English philosophical school of the 18th and 19th centuries, whose main representatives were Jeremy Bentham and John Stuart Mill (p. 35). Whereas the Confucians stressed family ties, the Mohists stressed universal love, the implementation of which they entrusted to the ruler. Thus, some consider Mo Di "the forerunner of socialism" (p. 36). One can readily see that Mohism also has much in common with the libertarian and social responsibility philosophies—a connection that escaped Siebert, Peterson and Schramm (1956)

The Naturalists were the followers of Zou Yan (350-270 B.C.E.), who focused on the two universal forces—*yin* and *yang*—and the five elements of which all process and all substance was composed—water, fire, wood, metal, and earth. [7] They developed a philosophy of organic naturalism. The *yin* and the *yang* characters were connected with darkness and light respectively. Needham (1956) says the five elements were considered "five powerful forces in ever-flowing cyclical motion, and not passive motionless fundamental substances" (p. 244). Everything in the universe fitted into a fivefold arrangement in symbolic correlation associated with the five elements. Unlike the Daoists, the Naturalists "did not shun the life of courts and kings … [because] they confidently felt themselves to be in possession of certain facts about the universe which rulers could neglect only at their peril" (pp. 234-235). The Greeks' pre-Socratic school had also distinguished five elements—earth, fire, air, water, and the non-limited—exhibiting certain similarities and striking differences with the Chinese version (p. 246). The *yin* and *yang* moved parallel to each other, but not along the same path for they met to operate as the controller of each other. Needham says, "The implication was that the universe itself is a vast organism, with now one and now another component taking the lead—spontaneous and uncreated it is, with all the parts of it cooperating in mutual service which is perfect freedom, the larger and the smaller playing their parts according to their degree, 'neither afore nor after other'" (pp. 288-289). The principle of the *yin-yang* complements, which demonstrates universal interconnections, provides the means to build a dynamic theory of communication outlets and free expression—a theory that can provide both explanation and probabilistic outcomes.

---

[7] The Classic of Changes (*Yijing*) identifies the Supreme Ultimate (*Taiji*) as the source and union of the *yin* and the *yang*. The *Taiji* generates and regulates the cycle of changes between *yin-yang* and the five elements that constitute the world. The Supreme Ultimate (or Supreme Polarity) is simply the principle of highest good. The 12th-century School of Principle identified *Taiji* with *li*, the rational principle ordering creation.

The Logicians, later identified as a school associated with Hui Shi (380-305? B.C.E.) and Gongsun Long (380-? B.C.E.), were comparable to the Greek Sophists. Needham (1956) sees a remarkable similarity between the Logicians' paradoxes and those in Greek history associated with Zeno of Elea. Both Mohists and Logicians, Needham says, "attempted to lay foundations upon which the world of natural sciences could have been built. Perhaps the most significant thing about them is that they show an unmistakable tendency towards dialectical rather than Aristotelian logic, expressing it in paradox and antimony, conscious of entailed contradiction and kinetic reality" (p. 199). Dialectical logic, which is common to both Eastern and Western philosophy, provides further muscle to build a dynamic theory of communication outlets and free expression.

Zheng (1987) has extracted six basic principles of Chinese philosophy most relevant to contemporary communication theory: the principle of part-whole interdetermination; the principle of dialectical completion of relative polarities—the *yin* and the *yang*; the principle of infinite interpretation; the principle of embodiment of reason in experience; the principle of epistemological-pragmatic unity; and the principle of symbolic reference (p. 26). The theory of communication outlets and free expression developed in this essay relies heavily on the first three principles.

Hindu philosophy and theory

The origin of Hindu philosophical ideas is associated with the Vedas, a body of texts traced to some 2,000 years before Christ. Mohanty (2000) says that the Vedas provide "an exemplary spirit of inquiry into 'the one being' (*ekam sat*) that underlies the diversity of empirical phenomena, and into the origin of all things" (p. 1). The Upanisads, a group of texts dating from 1000 B.C.E. to the time of Buddha, gave Hindu thinking a more philosophical character with their attempt to reinterpret Vedic sacrifices and to defend one central philosophical thesis: the identity of *Brahman* (the source of all things) and *atman* (the self within each person). These ancient texts, as well as the epics *Ramayana* and *Mahabharata*, Kautilya's *Artha-shastra*, Buddha's *dharma*, Sukra's *niti*, and various literary works, provide the elements constituting the Indian philosophy of state, society, and law.

Babbili (2001) states that the Hindu concepts of *dharma* (construed as duty, righteousness, customs, traditions, law, nature, justice, virtue, merit, and morality) and *ahimsa* (non-violence) form the basis of the entire superstructure of ethics in Hindu philosophy. *Dharma* takes three forms: virtues of the body—charity, helping the needy, social service; virtues of speech—truthfulness, benevolence, gentleness; and virtues of the mind—kindness, unworldliness and piety. *Ahimsa* requires absolute harmlessness and friendliness toward all beings. Mohanty (1998) adds that three basic concepts form the cornerstone of Hindu philosophical thought: the self or soul (*atman*), works (*karma*), and salvation (*moksa*).

Sarkar (1921) points out that the Hindu theory of the state emerged from an attempt to analytically define the state from the non-state or the state of nature. The

Hindu thinkers associated the state of nature with the logic of the fish, i.e., the doctrine of *matsya-nyaya*. In the non-state, people were "devouring one another like the stronger fishes preying upon the feebler," according to the *Mahabharata*; or "the strong would devour the weak like fishes," according to the *Manu Samhita;* or "people [would] ever devour one another like fishes," according to *Ramayana*; or "the child, the old, the sick, the ascetic, the priest, the woman and the widow would be preyed upon [based on] the logic of the fish," according to the *Matsya-Purana* (cited in Sarkar, 1921, p. 80). Kautilya (fourth century B.C.E.), who wrote the *Artha-shastra* (which is often compared with Sunzi's *The art of war* and Machiavelli's *The prince*),[8] asserted that the logic of the fish prevailed in the absence of the state. Kamandaka, who wrote the *Niti-shastra* in the fourth century after Christ, also said that the logic of the fish would operate in the absence of punishment (*danda*).

Sarkar (1921) states that two "inseparable accidents" of the Hindu theory of state are the doctrine of *mamatva* or *svatva* (i.e., property), and the doctrine of *dharma* (i.e., law, justice, and duty). Lying behind these two is the doctrine of *danda* (i.e., punishment, restraint, or sanction). The Hindu philosophy of sovereignty is based on these three concepts. The absence of *danda* is tantamount to *matsya-nyaya* or the state of nature. "A state is a state because it can coerce, restrain, compel" (p. 84). Thus, the theory is based on two premises: 1. No *danda*, no state; and 2. No state, no *dharma* or property. In Hindu philosophy, the rationale for *danda* is the original nature of man as described by

---

[8] Gowen (1929) and Modelski (1964) have compared the work of Kautilya and Machiavelli. Gowen describes *Artha-shastra* as "the crown of all earlier Indian experiments in the exposition of political theory" (p. 178) while Modelski describes it as "the finest, fullest, and most cogently reasoned Sanskrit treatise" on the science of polity (p. 549).

Kamandaka, Manu, and others. Sarkar explains, "The state is designed to correct human vices or restrain them and open up the avenues to a fuller and higher life" (p. 87).

The ruler in office is the *danda-dhara* (i.e., bearer of the torch of sovereignty). However, the ruler as a person is subject to *danda* as any other. *Danda* is a two-handed sword: It is a terror to the people and is a corrective of social abuses; it is also a most potent instrument of danger to the ruler himself. As Manu observes, *danda* would smite the king who deviated from his duty, as well as his relatives and possessions. Sarkar (1921) says herein lies "the logical check on the possible absolutism of the *danda-dhara* in the Hindu theory of sovereignty" (p. 90). In Kautilya's view, however, the king's authority is a matter of divine right, and no misgivings need be permitted to intrude themselves such as may weaken the ruler's will; and he must have no scruples, even when expediency compels him to be cruel (Gowen, 1929, p. 179).

Sarkar (1918) says that every branch of Sanskrit literature provides accounts of Hindu political life and theory. The sources include some of the *Puranas* (legends), all the *Smriti-shastras* (treatises on human tradition), *Manu-samhita* (hymns of Manu), the epics *Mahabharata* and *Ramayana*, *Pancha-tantra*, *Raghu-vamsha*, *Hitopadesha*, *Dharma-sutras* (aphorisms on Dharma), *Dharma-shastras* (treatises on Dharma), *Artha-shastras* (treatises on material gain), *Niti-shastras* (treatises on science of polity, particularly those of Kamandaka and Shukracharyya), *Dasha-kumaracharita*, *Dhanurveda* (a treatise on warfare), and King Bhoja's *Yukti-kalpa-taru* (requirements of the royal court). Sarkar asserts that the Hindu state was thoroughly secular, and never theocratic because of the absence of the concept of the divine right of kings.

Dissanayake (1987) has pointed out eight guiding principles in Indian philosophy related to communication: oneness of things—the interlinking of all beings, events, and phenomena in a composite whole; intuition; transtemporality; nonindividuality; liberation (*moksha*); illusion (*maya*); idealism; and renunciation and nonattachment (p. 154). All, except the last, of these show similarities to the Chinese philosophical principles of part-whole interdetermination, (the intuition, liberation, and idealism associated with) infinite interpretation, and (the transtemporality, nonindividuality, and illusion implicit in) the dialectical completion of relative polarities.

Siebert, Peterson and Schramm (1956) excluded the insights of Hindu philosophy on the nature of man, the nature of society and the state, the relation of man to the state, and the nature of knowledge and truth—the beliefs and assumptions they used "to determine the true relationship of the press to the social system" (p. 2). They excluded all non-Western philosophy despite the thesis they claimed to underlie their volume: that "the press always takes on the form and coloration of the social and political structures within which it operates" ((p. 1). Although they emphasized "that an understanding of these aspects of society is basic to any systematic understanding of the press" (p. 2), they developed their four theories solely based on Euro-American experience. Thus, for instance, *dharma* and *ahimsa* did not enter their construct of social responsibility; the logic of the fish failed to ring a bell despite its resemblance to Hobbes' state of nature; and the different nuance of "sovereignty" in Hindu, as well as Buddhist, philosophy escaped them in their construct of authoritarianism. In short, they used—to borrow an expression from Hardt (2001)—"European history as the universal mediating term, the standard through which all other histories are understood" (p. 245).

Buddhist philosophy and theory

Siddharta Gautama (c. 563-483 B.C.E.) founded Buddhism in a revolt against Brahmanism and the monarchical state, which the Hindus glorified.[9] Buddhists split into sects long before written records came into being. However, Needham (1956) says, all sects and schools were united on certain fundamentals, including the pre-Buddhist theory of *karma*. However, the Buddhist version of *karma* differed from that of the Upanisads "in that the happiness or misery was regarded as being based only on moral or ethical grounds, and not on whether ritual or sacrificial acts had been performed" (p. 399). The Buddhist *dharma* or doctrine is based on the Four Noble Truths: that suffering exists; that the cause of suffering is thirst, craving, or desire; that a path exists to end suffering; that the Noble Eightfold Path is the path to end suffering. Described as the "middle way," the path comprises the following components: right views, right intention, right speech, right action, right livelihood, right effort, right mindfulness, and right concentration. The essence of the *dharma* is the chain of causation.

The Buddhist scriptures comprise three collections: the *suttas*, the *vinaya*, and the *abhidhamma*. The *vinaya* relates to the discipline of the monks, and the *suttas* relate to the doctrine. *Abhidhamma* relates to doctrinal matters mentioned in the *suttas* in greater depth (Dasgupta, 1922). Buddhism crystallized into the Hinayana (Lesser Vehicle) and

---

[9] Pre-Buddhist philosophers who rejected Brahmanism included Samjaya, and the *Ajivikas* led by Makkhali Gosala. Another rebel was Mahavira (599-527 B.C.E.), who founded Jainism. This essay excludes these rebel philosophies because Hindu and Buddhist philosophies have the most contemporary relevance. Mohanty (2000) lists a number of other major schools of Indian philosophy: Materialist (*Carvaka*), Analysis (*Samkhya*) and Yoga, Logic *(Nyaya)* and Atomism (*Vaisesika*), Exegesis (*Purva Mimamsa*, and *Vedanta*. (*Jainism* asserted that all truths are relative to a standpoint. *Carvaka* believed that pleasure was the only thing desirable. *Samkhya* asserted that the highest liberation was a state of aloneness brought about by discriminating knowledge. *Vaisesikas* and *Naiyayikas* believed that both truth and falsity were extrinsic to cognition. *Mimasakas* were ambivalent on existence of God, but rejected theistic arguments. *Vedanta* asserted that freedom from ignorance was possible through devotion.) Mohanty (1998) provides thumbnail sketches of these schools.

Mahayana (Greater Vehicle) forms in the second century B.C.E. The former advocated individual progress to *arhat*-ship and attainment of *nirvana* while the latter advocated the salvation of everyone "by deliberate submission, if necessary, to a further series of rebirths, thus postponing the individual's attainment of *nirvana*" (Needham, 1956, p. 403). In the Mahayana view, the world was full of *bodhisattvas*, and "only the effort to save others could lead to the salvation of the self" (p. 404)—a paradox that the Daoists in China readily appropriated.

Mahayana Buddhism spread in East Asia from the second to the fifth century. In China, as Needham (1956) says, Buddhism "collided with Confucian skepticism and [Daoist] selflessness" (p. 410) because "Buddhism was a profound rejection of the world, a world which, each in their different ways, both Confucianism and [Daoism] accepted" (p. 430). Dasgupta (1922) points out that Buddhism encountered several ontological problems because of its thesis that everything was impermanent, so neither cause nor effect could abide; so no part-whole relationship could exist; so no universals could exist; so no substance, apart from its attributes, could exist; and no power-possessor separate from the power could exist (p. 165). Needham finds fault with Buddhism for turning away from Nature thereby discouraging the development of science.[10] However, he asserts that Buddhism was a great civilizing force in Central Asia, and he credits Buddhism for introducing "that element of universal compassion which neither [Daoism] nor Confucianism, rooted as they were in family-ridden Chinese society, could produce" (p. 431).

---

[10] Buddhism has come under criticism for turning away from society rather than from nature. On the contrary, the adherents of the Zen tradition of Mahayana Buddhism, which incorporates Daoism, are known to love nature and help people in society.

De Bary (1958) draws attention to the few definite instructions on social and political life that Buddhist literature provides. Buddhism, as evident in *Sutta Nipata*, disapproved the extremer manifestations of social inequality in the system of class and caste; it "definitely discouraged the pretensions of kings to divine or semidivine status" and tended to mitigate the autocracy of the king (p. 128). The first king, according to the *Digha Nikaya* (the Discourse of the Great Passing-away), held office by virtue of a contract with his subjects—one of the oldest versions of the contractual theory of the state. The king was merely a leader chosen by the people to restrain crime and protect property. Buddhism encouraged deciding major issues after free discussion based on the practices of the tribal republics of the Buddha's day. (This calls into question the Eurocentric tendency to trace democracy to ancient Greece alone.) Moreover, as Goonatilake (2001) points out, personal experience and verification is central to Buddhist theory: "Buddhism is … experiential and experimental, built on individual perception and experiences, not necessarily on another's unverified word of his experience" (p. 16).

Siebert, Peterson and Schramm (1956), in developing their theories, failed to examine the rich insights of Buddhist philosophy pertaining to sovereignty, democratic ideals, individual inquiry, ethical behavior, etc., that would have enabled them to think of historical reality without the universal mediation of the history of Europe or, in the words of Chakrabarty (2001), by "provincializing Europe."

East-West comparisons

Tu Weiming (1997) says that the Chinese thinkers, unlike their Western counterparts, were not all anthropocentric because a cosmological, as well as an anthropological, vision had inspired them (p. 3). Thus Chinese philosophy exhibited humanism—an emphasis on social relations, a strong commitment to the world, and the primacy of political order—from the very outset (p. 6). He says that the "humanistic splendor of Chinese civilization"—the Sinic worldview, cosmological thinking, benevolent despotism, and ethics—reached European intellectuals like Montesquieu, Voltaire, Quesnay, Diderot, and others through missionary reports. He adds, "Ironically, the Enlightenment mentality, especially in its nineteenth century Eurocentric incarnation, has become the most devastating disputation that the Chinese mind has ever encountered" (p. 22).

Woelfel (1987) asserts that the extent to which Eastern and Western thinking merged during the early origins is still little known. The principles of Chinese philosophy often bore a striking resemblance to the views of pre-Socratic Greek philosophers. The philosophy of Heraclitus (540? - 475? B.C.E.), whose dictum that one could not step in the same river twice epitomized the idea of endless change and restlessness, came very close to the Chinese model. Woelfel writes: "Miletus, the largest city in the Greek world and the home of Thales, Aniximander, and Aniximines, was the largest commercial trading center of the Greek world and, as such, was in continuous contact with the East. Land travel to Mesopotamia was common, as was sea travel to Egypt, and there is good evidence that Thales himself traveled to Egypt at least once" (p. 300). Radhakrishnan (1952) points out that various Greek philosophers traveled to the East in quest of knowledge, e.g., Democritus (460? - 370 B.C.E.) spent a long period in Egypt and Persia; Pythagoras traveled to Egypt; Solon (? - 559? B.C.E.) and Plato traveled extensively in the East (p. 24).

Mohanty (1998) says the problems that the Hindu philosophers raised but escaped the attention of their Western counterparts include such matters as the origin and appreciation of truth. The problems that escaped Hindu philosophers "include the question of whether knowledge arises from experience or from reason and distinctions such as that between analytic and synthetic judgments or between contingent and necessary truths" (p. 191). Thus, he argues, knowledge of both Hindu philosophy and Western philosophy is beneficial to fill the gaps.

The Hindu theory is more akin to the benevolent despotism of Confucianism though it does not agree with Mencius' view of the "original goodness" of human nature. It agrees neither with the Daoists' faith in primitive agrarian collectivism nor with the extreme authoritarianism of the Legalists. It has similarities with the thinking of some early modern European philosophers as well. The Hindu theory favored monarchy whereas Buddhist theory "opposed monarchy and defended a sort of republican government" (Mohanty, 2000, p. 96) because change and impermanence were central to Buddhist philosophy. Buddhism, in its two sectarian forms, promoted individualism, as well as collective responsibility. It promoted democratic ideals with its disapproval of caste and class distinctions and its propagation of universal love. Mohanty clarifies that the Hindu concept of monarchy also involved compassion; therefore, it is not comparable to the concept of sovereignty in Western political thought because in India the concept of *dharma* maintained its superiority over the sovereignty of the king.

The Hindu description of the non-state was quite similar to the description of the state of nature by European philosophers such as Hooker, Hobbes, Spinoza, and Mill in the early modern period. They conceived the state of nature as a state of the right of might, a war of all against all, an anarchy of birds and beasts, or a regime of vultures and harpies. Mo Di, the Chinese philosopher, also painted a similar picture of the non-state although the Mohists' view of the non-state was sometimes consistent with that of Daoists.

Developing universal theory

The horizontally integrative macrohistory approach enables us to see the global roots of the normative theories of communication outlets that Siebert, Peterson and Schramm (1956) originally developed. Although other scholars subsequently attempted to improve on the original four theories (see Asante, 1997; Lambeth, 1995), almost all such revisions also happened to come through the Eurocentric mould. Nordenstreng (1997) examines these revisions none of which has gained "the same momentum as the original *Four Theories*," even though the latter "is already a museum piece" (p. 97).

The preceding discussion of world philosophies shows the potential for non-separatist universal theories inasmuch as human thinking developed horizontally, rather than vertically, across time and space. Radhakrishnan (1952) asserts that the "fragmentation of philosophy into different compartments has prevented the survey of philosophical problems from a truly universal point of view" (p. 26). He calls for studies that cover philosophical developments of all climes and ages.

Both Chinese and Hindu philosophy (and, depending on interpretation, Buddhist philosophy as well)[11] share the principle of part-whole interdetermination. Mote (1989) points out that the "genuine Chinese cosmogony is that of organismic process, meaning that all parts of the entire cosmos belong to one organic whole and that they all interact as participants in one spontaneously self-generating life process" (p. 15). Oliver (1971) says that in Indian philosophy the world and all its creatures are "individual particles that possess essentially a primordial unity" so that "everything … is actually akin to everything else" (p. 15). Thus, one can trace the roots of the dependency and world system theories of the late 20th century to Eastern philosophy as well. If the whole is more than the sum of its parts, then the analysis of the world as a single unit should precede the analysis of its atomistic units such as regions or nation states (Gunaratne, 2001a).

---

[11] King (1999) says that the predominant emphasis in Buddhist philosophy is on the reduction of "wholes" into their constituent factors (*dharmas*). Two basic Buddhist principles reflect this emphasis: 1. Wholes do not ultimately exist if they are capable of reduction into their constituent parts; 2. The whole is no more than the sum of its parts (p.118). Goonatilake (1998), on the other hand, says that the Buddhist theory of

The principle of the dialectical completion of relative polarities (i.e., the *yin-yang* antinomy, which the Japanese adopted as the *in-yo*) offers a good starting point to derive a theory of communication outlets and free expression at the three levels of the world system: the world as a single unit, the nation state, and the individual (Gunaratne, 2002). The *yin* (conceived as earth, female, dark, positive, passive, and absconding) and *yang* (conceived as heaven, male, light, negative, active, and penetrating) are complementary universal forces. We can theorize that the far "left" and the far "right" of the socio-political spectrum worldwide are two such universal forces. In China, the Daoists represented the far "left," and the Legalists represented the far "right." The Daoists were extreme libertarians who believed in an undifferentiated natural condition of life devoid

---

"dependent co-arising"—*paticca samuppada*—links Buddhism and systems theory, which sees the whole as greater than its constituents (pp. 228-9). Co-dependent origination occurs because of karma, the totality of both good and evil thoughts that carries the body through the cycle of rebirths. However, no permanent self exists. The Buddhist continuity across births occurs through a stream of becoming interconnected with the external environment in which it operates (pp. 236-7).

of socio-political shackles. They had faith in the nature of man in a state of nature where man could pursue the unsullied, simple, and genuine life of the universe. They did not have faith in the nature of society and the state, both of which placed fetters of false duties and obligations on man. For them social "knowledge" was false, and truth emerged only from knowledge of nature. The Legalists were extreme authoritarians or fascists who believed in subjugating the masses through codified socio-political shackles. They had little faith in the nature of man. They promoted codified law aimed primarily at punishment to bring order out of what Hobbes called the state of war with other men or what Hindu philosophy identified as *matsya-nyaya*. They believed that man was subservient to the interests of the feudal bureaucratic state, which was best served by keeping man away from knowledge and truth.

A resemblance exists between the Chinese *yin-yang* antinomy and the classical Greek thinkers' concept of the dialectic as it evolved in Europe after the Middle Ages, particularly in the form of Hegelian thesis-antithesis dialectic. [Hegel's dialectic, or method of reasoning, was based on the premise that every idea or concept (thesis) generated its opposite (antithesis), and the two working against each other produced a new concept (synthesis). He believed that world history followed this triad.][12] The *yin* and *yang* traveled along parallel but separate paths acting as a control mechanism on each other at their meeting point. Similarly, in Hegelian terms, the clash of the thesis and antithesis produced a synthesis in a continuing cycle of the dialectic. Both approaches lead us to conclude that the interaction of two complements (*yin-yang*) or opposites (thesis-antithesis) generates a less extremist conjunction, which we may compare with the Buddhist notion of the "middle path."[13] In China, Confucianism (*Ru Jia*)—a conservative stabilizing force associated with benevolent despotism—represented the "middle path" between Daoism (*Dao Jia*) and Legalism (*Fa Jia*). In the West, the social responsibility concept represented the "middle path" between the extremes of libertarianism and authoritarianism. Thus, these comparable philosophical concepts of the West and the East enable us to construct a humanocentric theory of communication outlets and free expression.

---

[12] The dialectical method had its origins in Stoic philosophy, a product of Greek and Oriental thought, traced to Zeno (c. 333-261 B.C.E.). Stoicism viewed the world as a changing conflagration limited and ordered by the creative force of *logos* (world-reason). Jaspers (1981/1993), however, identifies Heraclitus as "the most ancient philosopher of dialectical thought," and Plato as "the originator of dialectic as method" (p. 287). Murti (in Radhakrishnan, 1952, p. 204) points out that dialectic is also the soul of Madhyamika system of Buddhist thought systematized by Nagarjuna in the second century. Dilworth (1989) credits Hegel for tracing "the movement of philosophy from East to West, for reasons connected with the dialectical movement of his thought," and for Hegel's enlarged vision reflecting "reconstructive classicism" (p. 4). Ironically, as Jung (1999) points out, Hegel was a totalizing Eurocentric who displaced Oriental philosophy "in the marginalized periphery of truth" (p. 287).

The concept of impermanence (*anicca*) in Buddhist philosophy—that everything is in a state of flux—enables us to grasp the constantly changing nature of the world system. The center-periphery structure keeps on changing just like every element in the unfathomable universe. Theories we develop to explain phenomena are also impermanent. It follows that the applicability of those theories to the whole and its component units also is impermanent. The meeting of the complementary forces of the *yin* and *yang* will produce different effects on the whole and its component parts over time and space. The hermeneutics relating to such effects are congruent with the principle of infinite interpretation in Chinese philosophy and the guiding principles of illusion and intuition in Indian philosophy. Thus, categorizing nation states as authoritarian or libertarian fails to accommodate the reality of impermanence. In reality, all we can theorize is about authoritarian or libertarian tendencies at a given juncture of time and space.

---

[13] Strictly speaking, the last of the Four Noble Truths, viz., adherence to the Noble Eightfold Path, represents the Hinayana Buddhist notion of the "middle path." In a practical sense, it also implies avoidance of the extremes. However, as Hoffmann (1978) points out, Nagarjuna's Madhyamika (middle doctrine) School, which furnished the philosophical background of Zen Buddhism, viewed the nature of everything as a mystery: It was neither *atman* (being) nor *anatman* (non-being or becoming) nor a synthesis of both but *sunya* (emptiness or void). According to Nagarjuna's dialectic, experience was a succession of interrelated momentary states (p. 276). According to Hegel's dialectic, the synthesis of *atman* and *anatman* is not only possible but also necessary (p. 288).

Saher (1970) points out that in Western philosophy an idea is *not accepted* unless proved to be correct. What is *not proved* is to be treated as false. In Eastern philosophy an idea is *not rejected* unless proved to be false. What is *not proved* may be accepted as true until proved to be false (pp. 204-205). Thus, scholars should adopt a degree of flexibility in developing a humanocentric theory of communication outlets and freedom of expression. Applying a modicum of flexibility, we can merge Western and Eastern philosophical concepts and derive the propositions that at a given juncture:

- At the level of the world system (as a single unit), the system of communication outlets lies somewhere between the tendencies toward extreme libertarianism and extreme authoritarianism.
- At the level of each component unit (or nation state) of the world system, the system of communication outlets lies somewhere between the tendencies toward extreme libertarianism and extreme authoritarianism.
- At the level of the individual, the extent of freedom of expression within the world system or its component units also mostly lies somewhere between the tendencies toward extreme libertarianism and extreme authoritarianism.
- Culturally defined systems of social responsibility—reflecting Gautama's "middle path," the Confucian "doctrine of the mean," Aristotle's "pursuit of the mean," or

Hegel's "synthesis"—predominate the center of the libertarianism-authoritarianism continuum at all three levels each taking the form of a (probable) normal distribution when the antinomy interacts in harmony.

In the above propositions, the term "system of communication outlets" is an expanded substitute for the traditional term "press system." It encompasses all forms of public communication transmitted through methods appropriate to each stage of historical progress—methods technically identified today as hard copy, airwaves, cables, and cyberspace.[14] The "spread of printing in the western world" is the starting point of the four theories (Siebert, Peterson, & Schramm, 1956, p. 9). A theory of communication outlets and free expression cannot be confined to the post-Gutenberg period. Block printing was widespread in the East for centuries before Gutenberg (Gunaratne, 2001b). The world system is the center-periphery structure of nation-states or clusters thereof reflecting their economic, political, cultural, military, and communication power relationships. The communication outlets at the world system level refer to those outlets concerned with transmitting information to reach audiences across geographical boundaries. The communication outlets at the nation-state level refer to those outlets concerned with transmitting information for domestic consumption. Individual freedom of expression at the world system or nation state level refers to the extent to which a person can reap the benefits recognized in Article 19 of the Universal Declaration of Human Rights: "Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers." Authoritarianism and libertarianism refer to the theoretical characteristics that Siebert attached to those concepts but suitably modified to include the contributions of non-Western philosophy and philosophers.

---

[14] Thus, it takes into account the pre-Gutenberg communication outlets such as *Acta Diurna*, which appeared in 59 BCE when Julius Caesar led the Roman republic; and *Di/Jing Bao* distributed in China from 618 to 1911.

Thus the authoritarian theory must concede the different interpretations of "sovereignty" in Eastern philosophy, particularly in the light of Siebert's assertion that the authoritarian theory "has been the basic doctrine for large areas of the globe … consciously or unconsciously adopted in modern times by … diverse national units" (Siebert, Peterson, & Schramm, 1956, p. 9). The authoritarian theory, Siebert says, grew out of the philosophy of absolute power of monarch, his government, or both—a philosophy reflected in the divine right of kings, which is largely discredited in Oriental thought. On the other hand, although Siebert points out that a basic assumption of the authoritarian theory is that "the group took on an importance greater than that of the individual since only through the group could an individual accomplish his purposes" (p. 11), he fails to show its connection to Oriental thought.

The libertarian theory must concede that market-dependent privately owned communication outlets alone do not represent the fullest freedom of expression. Siebert says the chief purpose of the libertarian communication outlets is to inform, entertain, and sell while helping to discover truth and acting as a check on government. According to Siebert's formulation of the libertarian theory, the "sales or advertising function" (p. 51) is what assures financial independence of communication outlets—a condition that reflects a Eurocentric capitalist bias. Cannot publicly funded communication outlets (e.g., non-commercial broadcasting operated by independent bodies) fit equally well into libertarianism?

Before exploring the range of "middle path" (or social responsibility) systems, one should acknowledge the contribution of both East and West to the development of the main theoretical concepts of authoritarianism and libertarianism. Siebert, Peterson and Schramm (1956) have identified only the Western contributors to these two theories. As principal contributors to the authoritarian theory, we can add the *Fa Jia* (Legalist) advocates Shang Yang, Shen Bui-hai, and Shen Dao; Sunzi, who wrote "The art of war"; and Kautilya, the so-called "Indian Machiavelli" (although it is far more accurate to identify Machiavelli as the "Italian Kautilya"). The paradox is that even though the West appears to see the East as the more authoritarian, Eastern philosophy overall reflects a high degree of humanism and universal love. As principal contributors to the libertarian theory, we can also add the *Dao Jia* and its leaders Laozi and Zhuangzi; and Gautama, the founder of Buddhism. The Daoists were extreme libertarians who wanted no social shackles. Gautama, a moderate libertarian, preferred republican government to monarchy thereby sowing the seeds of democracy (Figure 1).

Our theory leads us to predict that the harmonious interaction of the *yin-yang* complements or the operation of the principle of the dialectic would produce a communication-outlet system closely resembling varying shades of culturally defined social responsibility as the (probable) norm of the world system and its component units. (The non-harmonious interaction of the yin-yang complements could result in a dynamic "disequilibrium"[15]—a positively or negatively skewed distribution leaning toward libertarianism or authoritarianism.) So conceptualized, we can trace the roots of the social responsibility theory to Confucius, as well as to Hindu philosophy. Confucianism upheld that man was born for uprightness, and that people's goodwill was essential to good government in the context of an intellectual democracy headed by a benevolent ruler. Mote (1989) says that Confucianism was characterized by "its strong ethical sense, its *social responsibility*, and its constructive, rational approach to immediate problems" (p. 31). Mohists represented a shade of social responsibility somewhat to the left of Confucianism. The Naturalists, who saw "perfect freedom" in the harmony of the social organism, also reflected another shade of social responsibility. Hindu philosophy appears to agree with the social responsibility concept somewhat to the right of Confucianism. Hinduism's association with the caste system contrasts with Confucianism's advocacy of education for all and demolition of social barriers. However, Hinduism's doctrine of *dharma* and *danda* discouraged authoritarianism in favor of a benevolent monarchy reflecting democratic ideals. Hindu theory of sovereignty was not the same as the Western theory of sovereignty.

To summarize succinctly what we have derived:

- The humanocentric theory of communication-outlets and free expression derived from merging the principle of the *yin-yang* complements of Eastern philosophy with the principle of the dialectic of Western philosophy is a deceptively simple model comprising four broad elements.

---

[15] I use the term "disequilibrium" in the functional sense associated with traditional sociology rather than in the sense associated with the Second Law of Thermodynamics (see Prigogine & Stengers, 1984). In the thermodynamic sense, elements in equlibria become inactive because of energy loss or entropy.

- In empirical terms, these four elements comprise two theoretically independent variables (libertarianism and authoritarianism), an intervening variable (cultural values), and a dependent variable (social responsibility).
- Social responsibility, the dependent variable, comes up in various shades because of cultural values, the intervening variable.
- Libertarianism and authoritarianism occupy the two tails of the (probable) normal distribution of systems of communication outlets and free expression. Social responsibility (the "middle path") takes the middle position with its various shades moving toward the two tails (Figure 2). As noted already, disharmonious interaction of the yin-yang complements could result in a dynamic "disequilibrium"—a skewed distribution.
- This model is applicable to all three levels of the world system: the world system itself, the nation-state, and the individual.

It should be clear that the principle of the *yin-yang* complements has more explanatory power than the Hegelian dialectic because it allows for dynamic "disequilibria" or fluctuations. As Zheng (1987) explains, everything in reality is not only regarded as generated from the interactions between *yin* and *yang* forces but everything is composed of these two forces. In this sense, Zheng says, everything is a synthetic unity of *yin* and *yang* in various stages of their functioning, and this dialectical change of things forces us to understand them realistically.

> Change relativizes the standards of evaluation, because it generates new interests, new relationships, and new values. … [B]ut one must bear in mind the distinction between relativization in an absolute sense and relativization in a relative sense.

> In an absolute sense, relativization is the essential principle for the change and transformation of a thing and a situation. [R]elativization in a relative sense consists in seeing and placing things in a different light and at different angles without necessarily requiring a change in time. (Zheng, 1987, pp. 34-35)

One cannot prove the *yin-yang* interaction itself with the Western empirical method of data collection. The empirical method cannot also prove the existence of God. Chinese philosophy established the *yin-yang* phenomenon with the Supreme Ultimate (*Taiji*), the principle of highest good, as its source and regulator. In this sense, the metaphysical operation of this phenomenon is very similar to that of the Buddhist concept of *karma* in the samsaric cycle.

Statistical theory justifies the presumption of a (probable) normal distribution of an unknown universe. Because the parameters of the universe of communication outlets are not known, we have to make estimates by sampling the universe. The means of random samples, if drawn repeatedly, will form a normal distribution. Until empirical research proves otherwise, we are justified in presuming that the harmonious interaction of the *yin-yang* complements generates a (probable) normal distribution of communication outlets.

Discussion and Conclusions

Western scholars (e.g., Hachten, 2001) who associate libertarianism and social responsibility as Western constructs do so by using vertically separatist Euro-American history to extrapolate to the entire world. Other scholars who attempt to create new theories of communication-outlets (e.g., developmental, public/civic, revolutionary, democratic socialist, and so on)[16] are merely describing various shades of social responsibility determined by cultural factors at a particular juncture of time and space. These shades of social responsibility are mostly temporary phenomena (as evident in the evanescent communist formulation) in comparison to the characteristics of the two theoretical systems constituting the tails of the normal distribution of systems of communication outlets and free expression. Gunaratne (1998) has shown the close connections of developmental and public journalism with the social responsibility theory.

Hachten (2001) discusses the theory and values of freedom of the press [communication outlets] solely in terms of the Euro-American experience. The centerpiece of his discussion is the First Amendment to the U.S. Constitution and the constitutional law derived therefrom. His definition of freedom of the press is "the right of the press [communication outlets] to report, to comment on, and to criticize its own government without retaliation or threat from that authority" (p. 31). (This definition, however, emphasizes the nation-state level while ignoring the world system level, where governments themselves, together with transnational media conglomerates, dominate the operation of communication outlets. Is the Voice of America, for instance, free to criticize the U.S. government?) Furthermore, he says that in U.S. law "free speech and free press are identical rights" (p. 31) and that "freedom of the press is an individual right, we are all protected by it" (p. 33). (Freedom of the press was conceived as an individual right in the late 18th century when anyone could start a printing press to extend his or her freedom of speech. In the contemporary world, not everyone has equal access to the mainstream press. Hence the importance of the individual level in the world system paradigm.)

---

[16] Asante (1997) provides a summary of the improvements to the "four theories" that various scholars have suggested (pp. 16-21).

Hachten (2001) celebrates the triumph of Western journalism after the fall of communism. He claims, "Non-Western nations have adopted not only the gadgets and equipment of the U.S. press and broadcasting but also its practices, norms, ethical standards, and ideology" (p. 18). On the other hand, Sussman (2000) paints a grim picture of global press freedom. He refers to Freedom House's January 2000 press freedom survey, according to which "nearly two-thirds of countries (63 percent) restrict print and electronic journalism. Some 80 percent of the world's people live in nations with less than a free press" (p. 1). The January 2001 survey shows only a 1 percent reduction of each of these two figures. The Freedom House surveys, despite the inadequate criteria used to measure freedom of communication outlets and free expression (Gunaratne, 2002),[17] help support the notion of (a probable) normal distribution of communication-outlets systems adumbrated in this essay. Countries reflecting libertarian tendencies, constituting 11 percent of the total (21 out of 187) with the minimum scores of 1-15, are in the left tail of the distributional curve[18]. Countries reflecting authoritarian tendencies, constituting 13 percent of the total (24 out of 187) with the maximum scores of 76-100, are in the right tail.[19] The other countries more or less follow the pattern of the normal distribution foreshadowed in our theory. These countries reflect three main shades of social responsibility if we equate Freedom House's "partly free" countries (SR2), constituting 28 percent (53 out of 187) of the total, with the world's most prevalent shade of social responsibility (Figure 3).

---

[17] Freedom House uses four criteria for measuring press freedom in each country: laws and regulations that influence media content; political pressures and controls on media content; economic influences over media content; and repressive actions (killing journalists, physical violence, censorship, self-censorship, arrests, etc.).

[18] These countries are Australia, Austria, Bahamas, Belgium, Canada, Denmark, Finland, Germany, Jamaica, Luxembourg, Marshall Islands, Nauru, Netherlands, New Zealand, Norway, St. Lucia, Sweden, Switzerland, and United States.

Figure 4 shows the fit of the normal curve to a histogram of the average press-freedom scores assigned to each country by Freedom House during the eight-year period 1994-2001. Figure 5 presents the results of the Anderson-Darling Normality Test relating to the same data. The test is statistically significant with $p < .01$. The mean score (46.7) and the median score (47.8) lie close to each other denoting the "middle-path" or partly free press. The distribution is both positively and negatively skewed, a deviation from the presumed normality apparently resulting from Freedom House's tendency (a) to de-emphasize the effect of institutional conventions and economic considerations on information dissemination in the libertarian-tending countries, and (b) to ignore the degree of accessibility of exogenous communication-outlets in the authoritarian-tending countries (Gunaratne, 2002).

Merrill, Glade and Blevens (2001) have advanced the thesis that the press [communication-outlets] in the world, as well as in the United States, is losing its freedom and its institutional importance. They add, "However, a corollary thesis is that with the loss of this freedom, the 21st century will see more social order and harmony and a more cooperative and a citizen-based press" (p. xvii). They see the 18th century Enlightenment liberalism giving way to the Eastern philosophy of harmony and cooperation. They are referring to the rise of communitarianism and its sub-genre public or civic journalism. Thus they take the opposite view to that of Hachten and other "optimistic libertarian individualists" (p. xvii) when they foreshadow the reassertion of the spirit of communitarianism "that had hung around the periphery at least since the days of Plato and Confucius" (p. xxi).

---

[19] These countries are Afghanistan, Angola, Azerbaijan, Belarus, Bhutan, Burundi, China, Congo (Kinshasa), Cote d'Ivoire, Cuba, Equatorial Guinea, Iraq, Korea (North), Libya, Myanmar, Saudi Arabia,

The authors mentioned in the preceding paragraphs—Hachten, as well as Merrill, Gade and Blevens—have to varying degrees confused the systems of communication outlets with various genres of journalism—developmental, public/civic, and so on. Our humanocentric theory helps us see broad variations of "middle-path" systems of communication outlets and free expression (SR1, SR2, SR3, etc.) situated between the extremes of libertarianism and authoritarianism. They are the outcomes of cultural values in a world undergoing constant change. Winfield, Mizuno and Beaudoin (2000) clarify that "the characteristics of a country's media depend on the culture in which they operate" (p. 323). It is not scholarship but ethnocentrism to identify the positive and the freer as Western and the obverse as non-Western. Our analysis of Eastern philosophy finds no basis for such denigration.

Our theory is three-dimensional. It enables us to analyze the freedom of communication outlets and expression at all three levels of the world system using the same definition of freedom (Gunaratne, 2002, has argued the need for such a three-dimensional theory). If freedom from government interference is an essential element of freedom of communication outlets at the nation-state level, then that element is essential for determining freedom at the world system level as well. Then, considering the extent to which government-funded organizations are engaged in international broadcasting

---

Somalia, Sudan, Swaziland, Tajikistan, Turkmenistan, United Arab Emirates, Uzbekistan, and Vietnam.

alone, coupled with the extent to which transnational corporations dominate the global communication outlets, one can attempt to fathom (and wonder about) the extent of freedom of communication outlets at the world system level. On the other hand, the very fact that such global communication outlets can reach people in nations where restrictions exist on domestic communication outlets makes those people freer at the individual level.

Finally, how exactly does the proposed theory of communication outlets and free expression differ from the four theories of the press? The former is dynamic, explanatory, and "predictive" (see Footnote 1); the latter is static, descriptive, and normative. The proposed theory shows the continuous interaction of the two complements or antonyms—authoritarianism and libertarianism—to produce varying shades of social responsibility determined by cultural values across time and space. It views social responsibility in non-ideological terms—not as an extension of libertarianism but as an outcome of cultural factors shared by communities comprising the world system. Applying the principle of infinite interpretation, it looks at Peterson's "social responsibility theory" and Schramm's "Soviet communist theory" merely as descriptions of two of the several possible shades of social responsibility. It has a humanocentric emphasis whereas the four theories have a Eurocentric emphasis. The proposed formulation also tends to meet Kaplan's (1964) criteria for theory: it interprets and unifies established "laws" (viz., the principle of the yin-yang complements, and the principle of the dialectic), it modifies the existing theories to fit data unanticipated in their formulation (viz., the distribution of press freedom scores), and it guides in discovering new and more powerful generalizations. Our formulation, however, needs further refinement to allow for nonlinear outcomes in interdependent open systems.

References

Amin, S. (1989). *Eurocentrism*. New York: Monthly Review Press.

Asante, C.E. (Comp.). (1997). *Press freedom and development: A research guide and selected bibliography*. Westport, CT: Greenwood Press.

Babbili, A.S. (2001). Culture, ethics, and burdens of history: Understanding the communications ethos of India. In S.R. Melkote and S. Rao (Eds.), *Critical issues in communication: Essays in honor of K.E. Eapen* (pp. 144-176). New Delhi: Sage

Bahm, A.J. (1995). *Comparative philosophy: Western, Indian and Chinese philosophies compared* (Rev. ed.). Albuquerque, NM: World Books.

Braman, S. (2002). A pandemonic age: The future of international communication theory and research. In W. B. Gudykunst & B. Mody (Eds.), *Handbook of international and intercultural communication* (2nd ed., pp. 399-413). Thousand Oaks, CA: Sage.

Byun, D.H., & Lee, K. (2001, Aug. 5). *Confucian values, ethics and legacies in history: Neo-Confucian debates and communication philosophy in Korea*. Paper presented to the Media Ethics and Cultural and Critical Studies divisions at the annual convention of the Association for Education in Journalism and Mass Communication, Washington, DC.

Carter, R.F. (1991). Comparative analysis, theory, and cross-cultural communication. *Communication Theory, 1*, 151-159.

Chakrabarty, D. (2000). *Provincializing Europe: Postcolonial thought and historical difference*. Princeton, NJ: Princeton University Press.

Dasgupta, S. (1922). *A history of Indian philosophy* (Vol. 1). Cambridge: University Press.

De Bary, T. (Ed.). (1958). *Sources of Indian tradition*. New York: Columbia University Press.

De Bary, T., & Bloom, I. (Eds.). (1999). *Sources of Chinese tradition* (Vol. 1). New York: Columbia University Press.

Dervin, B. (1991). Comparative theory reconceptualized: From entities and states to processes and dynamics. *Communication Theory, 1*, 59-69.

Dilworth, D.A. (1989). *Philosophy in world perspective: A comparative hermeneutic of the major theories*. New Haven, CT: Yale University Press.

Dirlik, A. (2000). Reversals, ironies, hegemonies: Notes on the contemporary historiography of modern China. In A. Dirlik, V. Bahl, & P. Gran (Eds.), *History after the three worlds: Post-Eurocentric historiographies* (pp. 125-156). Lanham, MD: Rowman & Littlefield.

Dissanayake, W. (1987). The guiding image of Indian culture and its implications for communication. In D.L. Kincaid (Ed.), *Communication Theory: Eastern and Western Perspectives* (pp. 151-160). San Diego, CA: Academic Press.

Donohew, L., & Palmgreen, P. (1989). Theory construction. In G.H. Stempel III & B.H. Westley (Eds.), *Research methods in mass communication* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

Fletcher, J. (1985). Integrative history: Parallels and interconnections in the early modern period, 1500-1800. *Journal of Turkish Studies, 9*, 37-58.

Freeman, C. (1996). *Egypt Greece and Rome: Civilizations of the ancient Mediterranean.* Oxford: University Press.

Goonatilake, S. (2001). *Anthropologizing Sri Lanka: A Eurocentric misadventure.* Bloomington, IN: Indiana University Press.

Goonatilake, S. (1998). *Toward a global science: Mining civilizational knowledge.* Bloomington, IN: Indiana University Press.

Gowen, H.H. (1929). 'The Indian Machiavelli' or political theory in India two thousand years ago. *Political Science Quarterly, 44*, 173-192.

Gunaratne, S.A. (2002). Freedom of the press: A world system perspective. *Gazette, 64*, 343–369.

Gunaratne, S.A. (2001a, Aug. 5). *Global triadization: A theoretical framework for global communication research.* Paper presented to the International Communication Division at the annual convention of the Association for Education in Journalism and Mass Communication, Washington, DC.

Gunaratne, S.A. (2001b). Paper, printing, and the printing press: A horizontally integrative macrohistory analysis. *Gazette, 63*, 459-479.

Gunaratne, S.A. (1998). Old wine in a new bottle: Public journalism, developmental journalism, and social responsibility. In M.E. Roloff (Ed.), *Communication yearbook 21* (pp. 277-321). Thousand Oaks, CA: Sage.

Hachten, W.A. (2001). *The troubles of journalism: A critical look at what's right and wrong with the press* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.

Hardt, M. (2001). The eurocentrism of history. *Postcolonial Studies, 4*, 243-249.

Hoffmann, Y. (1978). The possibility of knowledge: Kant and Nagarjuna. In B. Scharfstein (Ed.), *Philosophy East/philosophy West: A critical comparison of Indian, Chinese, Islamic, and European philosophy* (pp. 269-290). New York: Oxford University Press.

Jacobson, T.L. (1991). Theories as communications. *Communication Theory, 1*, 145-150.

Jaspers, K. (1981/1993). *The great philosophers* (E. & L.H. Ehrlich, trans.). New York: Harcourt Brace & Co.

Jung, H.Y. (1999). Postmodernity, Eurocentrism, and the future of political philosophy. In F. Dallmayr (Ed.), *Border crossings: Toward a comparative political theory* (pp. 277-296). Lanham, MD: Lexington Books.

Kaplan, A. (1964). *The conduct of inquiry: Methodology for behavioral science*. San Francisco: Chandler Publishing.

Kerlinger, F.N. (1986). *Foundations of behavioral research*. New York: Holt, Rinehart & Winston.

King, R. (1999). *Indian philosophy: An introduction to Hindu and Buddhist thought*. Washington, DC: Georgetown University Press.

Krippendorff, K. (1993). Conversation or intellectual imperialism in comparing communication (theories). *Communication Theory, 3*, 252-266.

Lambeth, E.B. (1995). Global media philosophies. In J.C. Merrill (Ed.), *Global journalism: Survey of international communication* (pp. 3-18). White Plains, NY: Longman.

Legge, J. (1895). *The Chinese classics: The works of Mencius* (Vol. 2). Oxford: Clarendon Press.

Legge, J. (1893). *The Chinese classics: Confucian analects, the great learning, and the doctrine of the mean* (Vol. 1). Oxford: Clarendon Press.

Merrill, J.C., Gade, P.J., & Blevens, F.R. (2001). *Twilight of press freedom: The role of people's journalism*. Mahwah, NJ: Lawrence Erlbaum.

Modelski, G. (1964). Kautilya: Foreign policy and international system in the ancient Hindu world. *The American Political Science Review, 58*, 549-560.

Mohanty, J.N. (1998). Indian philosophy. In *The new encyclopedia Britannica* (Vol. 21, pp. 191-212). Chicago: Encyclopedia Britannica.

Mohanty, J.N. (2000). *Classical Indian philosophy*. Lanham, MD: Bowman & Littlefield.

Mote, F.W. (1989). *Intellectual foundations of China* (2nd ed.). New York: Alfred A. Knopf.

Needham, J. (1956). *Science and civilization in China: History of scientific thought* (Vol. 2). Cambridge: University Press.

Nordenstreng, K. (1997). Beyond the four theories of the press. In J. Servaes & R. Lie (Eds.), *Media and politics in transition: Cultural identity in the age of globalization* (pp. 97-112). Leuven, Belgium: Acco.

Nuyen, A.T. (2001). Confucianism and the idea of equality. *Asian Philosophy, 11* (2), 61-71.

Oliver, R.T. (1971). *Communication and culture in ancient India and China*. Syracuse, NY: Syracuse University Press.

Pearce, W.B. (1991). On comparing theories: Treating theories as commensurate and incommensurate. *Communication Theory, 1*, 159-164.

Prigogine, I., & Stengers, I. (1984). *Order out of chaos: Man's new dialogue with nature.* Toronto: Bantam Books.

Radhakrishnan, S. (Ed.). (1952). *History of philosophy Eastern and Western* (Vol. 1). London: George Allen & Unwin.

Rubin, V.A. (1976). *Individual and state in ancient China: Essays on four Chinese philosophers* (S.I. Levine, Trans.). New York: Columbia University Press.

Saher, P.J. (1970). *Eastern wisdom and Western thought: A comparative study in the modern philosophy of religion*. New York: Barnes & Noble.

Said, E. (1978). *Orientalism*. New York: Random House.

Sarkar, B.K. (1921). The Hindu theory of the state. *Political Science Quarterly, 36*, 79-90.

Sarkar, B.K. (1918). Hindu political philosophy. *Political Science Quarterly, 33*, 482-500.

Siebert, F.S., Peterson, T., & Schramm, W. (1956). *Four theories of the press*. Urbana, IL: University of Illinois Press.

Sussman, L.R. (2000). *Censor dot gov: The Internet and press freedom*. New York: Freedom House.

Tehranian, M. (1991). Is comparative communication theory possible/desirable? *Communication Theory, 1*, 44-59.

Tu Weiming (1997). Chinese philosophy: a synoptic view. In E. Deutsch & R. Bontekoe (Eds.), *A companion to world philosophies* (pp. 3-23). Malden, MA: Blackwell.

Wang, G., & Shen, V. (2000). East, West, communication, and theory: Searching for the meaning of searching for Asian communication theories. *Asian Journal of Communication, 10* (2), 14-32.

Winfield, B.H., Mizuno, T., & Beaudoin, C.E. (2000). Confucianism, collectivism and constitutions: Press systems in China and Japan. *Communication Law & Policy, 5*, 323-347.

Woelfel, J. (1987). Development of the Western model: Toward a reconciliation of Eastern and Western perspectives. In D.L. Kincaid (Ed.), *Communication Theory: Eastern and Western Perspectives* (pp. 299-318). San Diego, CA: Academic Press.

Zheng Zhongying (1987). Chinese philosophy and contemporary human communication theory. In D.L. Kincaid (Ed.), *Communication Theory: Eastern and Western Perspectives* (pp. 23-43). San Diego, CA: Academic Press.

Figure 1. Theories of communication outlets
(with supporting philosophies and philosophers)

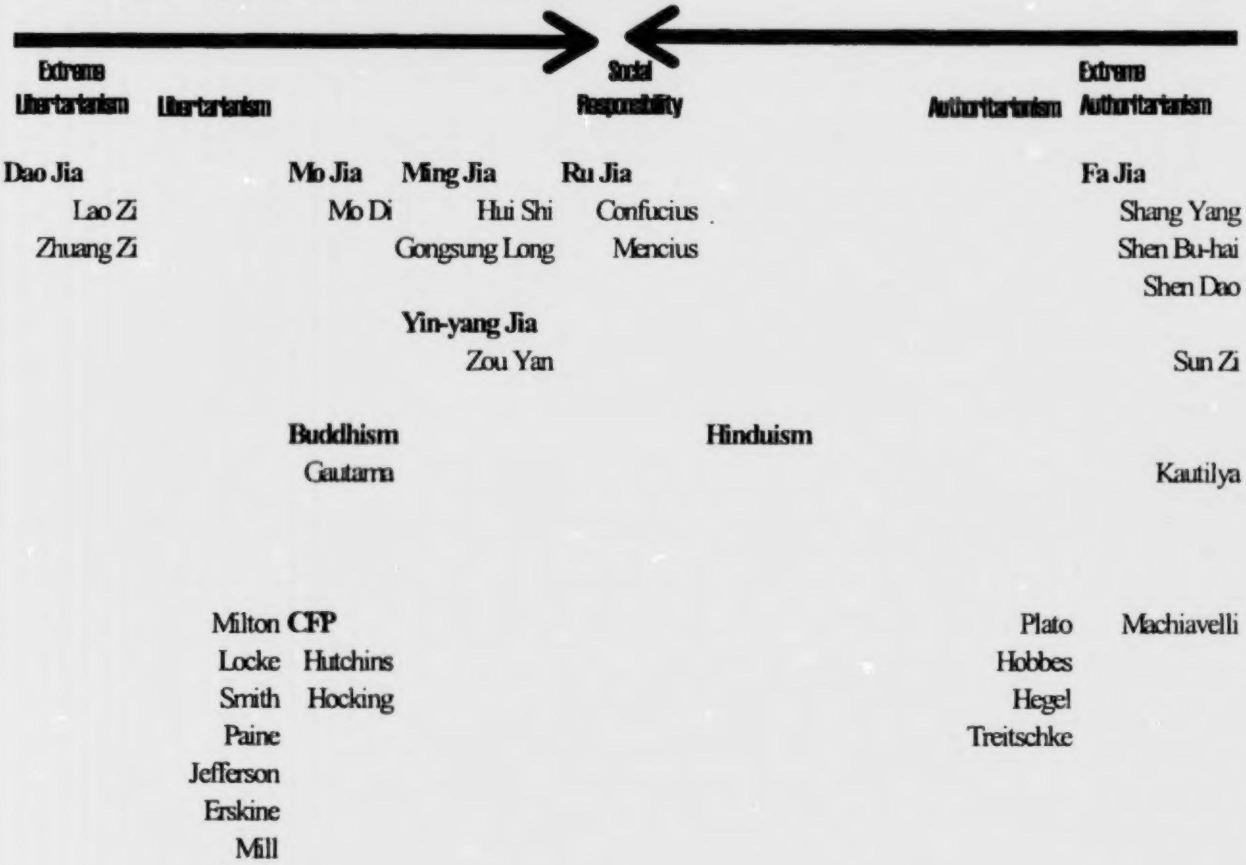
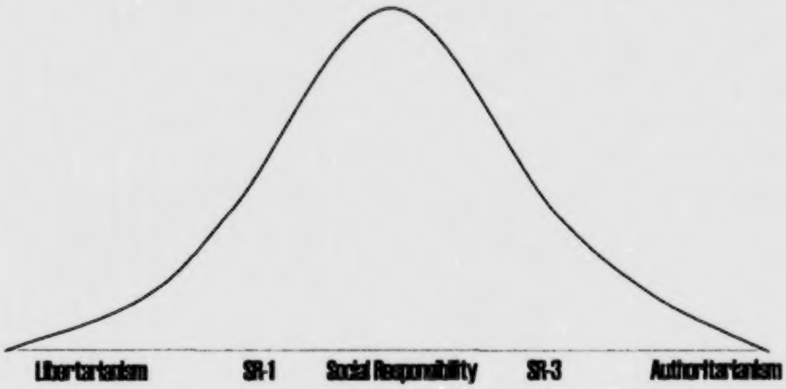

Extreme Libertarianism
Libertarianism
Social Responsibility
Authoritarianism
Extreme Authoritarianism
Dao Jia
Lao Zi
Zhuang Zi
Mo Jia
Mo Di
Ming Jia
Hui Shi
Gongsung Long
Ru Jia
Confucius
Mencius
Fa Jia
Shang Yang
Shen Bu-hai
Shen Dao
Yin-yang Jia
Zou Yan
Sun Zi
Buddhism
Gautama
Hinduism
Kautilya
Milton
CFP
Locke
Hutchins
Smith
Hocking
Paine
Jefferson
Erskine
Mill
Plato
Machiavelli
Hobbes
Hegel
Treitschke

Figure 2. Probable theoretical distribution of systems of communication-outlets



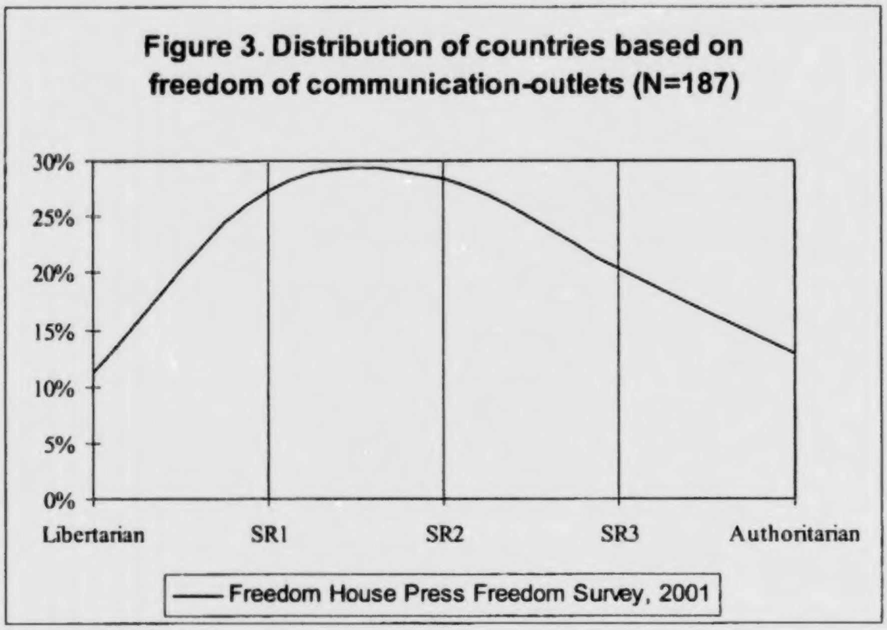


Figure 3. Distribution of countries based on freedom of communication-outlets (N=187)

Figure 4

Average of Press Freedom Scores, 1984-2001 (Freedom House)

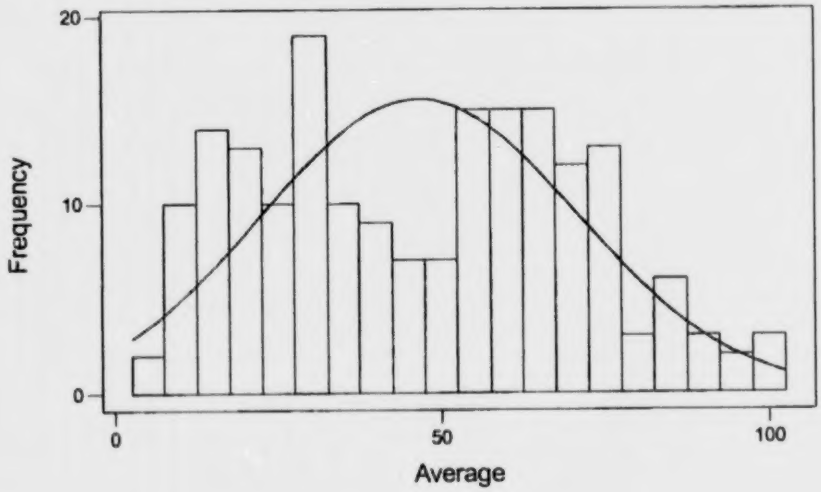
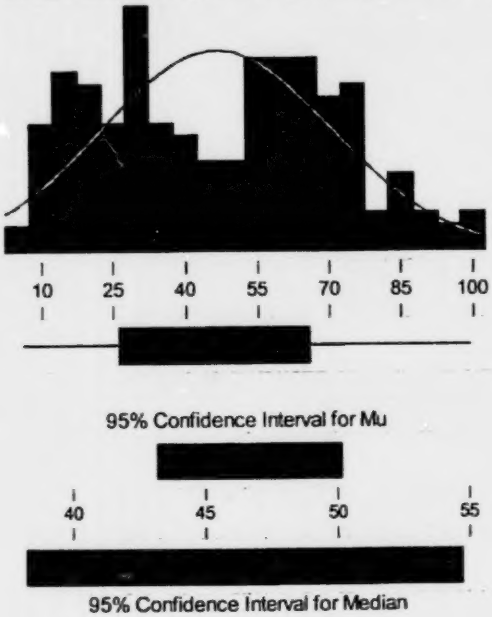


Figure 5

Distribution of Press Freedom Scores



Average Scores
1984-2001

Anderson-Darling Normality Test

A-Squared:	2.343
P-Value:	0.000
Mean	46.6644
StDev	24.1233
Variance	581.934
Skewness	0.138759
Kurtosis	-1.05870
N	188
Minimum	6.0000
1st Quartile	26.1563
Median	47.8125
3rd Quartile	65.8125
Maximum	99.3750

95% Confidence Interval for Mu

43.1936 50.1352

95% Confidence Interval for Sigma

21.9065 26.8432

95% Confidence Interval for Median

38.2679 54.7410

BEST COPY AVAILABLE

FRAMING EFFECTS IN HOMOGENEOUS AND HETEROGENEOUS MEDIA ENVIRONMENTS: THE CASES OF THE *ON TAIWAN* CONTROVERSY AND THE FOURTH NUCLEAR POWER PLANT DISPUTE

Huiping Huang

Department of Adult & Continuing Education
National Taiwan Normal University
162, Sec. 1, Ho-Ping E. Road, (106)
Taipei, Taiwan, R. O. C.
Tel: (O) 011-886-2-2393-6798 ext. 722
Fax: (O) 011-886-2-2394-6506
E-Mail: t06019@cc.ntnu.edu.tw

Paper presented to the Communication Theory and Methodology Division at the annual conference of the Association for Education in Journalism and Mass Communication, Miami, Florida, 2002.

FRAMING EFFECTS IN HOMOGENEOUS AND HETEROGENEOUS MEDIA ENVIRONMENTS: THE CASES OF THE *ON TAIWAN* CONTROVERSY AND THE FOURTH NUCLEAR POWER PLANT DISPUTE

ABSTRACT

This study uses two cases in Taiwan to examine the conditional factors of framing effects at two levels, the media environment level and the individual level. It conducted media content analyses and audience survey to compare media frames and audience frames in different media environments. Results show that, the media environments the two cases created differ on the dimension of frame homogeneity and heterogeneity. The effects of news frames on constraining audience frames vary with media environments. In the homogeneous media environment created by the *On Taiwan* controversy, audience frames concentrate on few frames, and the types and priorities of audience frames overlap with those of media frames. But in the heterogeneous media environment created by the power plant dispute, the audience frames are more diverse, and a disjuncture between audience frames and media frames is found. The audience appears active in choosing frames of personal relevance when conceiving the power plant dispute. The findings suggest that media framing effects are more powerful in a homogeneous than in a heterogeneous media environment. In addition, the conditional influence of audience factors such as partisanship and media use on framing effects differs in the two media environments. Partisanship predicts the adoption of media frames only in the heterogeneous environment, although this may be related to the nature of the issue involved.

Key words: framing effects, media frame, audience frame, the nature of issue,
homogeneous media environment, heterogeneous media environment

FRAMING EFFECTS IN HOMOGENEOUS AND HETEROGENEOUS MEDIA ENVIRONMENTS: THE CASES OF THE *ON TAIWAN* CONTROVERSY AND THE FOURTH NUCLEAR POWER PLANT DISPUTE

Framing is a seminal concept capturing the essence of the news encoding and decoding processes from a social constructivist perspective. It provides a useful way to examine the linkages between news texts on social issues and audience's understanding of the issues. Research on framing is generally considered as an advancement beyond the agenda-setting tradition as it helps to assess not just the effects of the salience of issues but the salience of issue attributes on how people think about the issues (McCombs, Shaw, & Weaver, 1997; Pan & Kosicki, 1993).

Although earlier theoretical speculations suggest a strong role of media through framing (Edelman, 1993; Gamson & Modigliani, 1989), there are cautions about its universal effects and researchers suggested that the effectiveness of framing could be contingent (McLeod, Kosicki, & McLeod, 1994; Entman, 1993). But until now, not many empirical studies of framing specifically look into this aspect. Even if evidence from few studies reveals that media framing effects are contingent (Gamson, 1992; Haider-Markel & Joslyn, 2001; Huang, 1995; Iyengar, 1991), the investigations of the conditional influence are limited to individual differences. It remains unclear whether factors at another level such as the characteristics of issues and the diversity of media environments the issues create operate in the mechanisms of framing effects. It is also not known whether the conditional influence of individual factors on framing varies with different media environments.

The goal of this study is to fill up this gap in prior research. It intends to examine the conditional factors of media framing effects at two levels, the media environment level and the individual level. The extension to investigate the role of the media environment on framing serves another purpose. In normative democratic political systems, the media are expected to provide platforms for a diverse range of views to meet and contend, so the public is offered thorough information for making meaningful political choices (Gurevitch & Blumler, 1990). But observations on the real-world operations often suggest the opposite. The media have been criticized for substantiating administration ideology and manufacturing elite consensus, and have been considered responsible for constraining collective consciousness (Gitlin, 1980; Herman & Chomsky, 1988; Reese & Buckalew, 1995). Exploring the influence of the diversity of media environment on framing provides empirical grounds for previous research. If the audience is indeed more likely to adopt the dominant media frames in a homogeneous media environment than in a heterogeneous media environment, the public should be aware of such influence in order to make a stronger demand on the media system for an open marketplace of ideas.

The following part will explicate the key concepts used in this study and will review findings of media framing effects and relevant conditional factors.

The Concepts of Frames, Media Frames and Audience Frames

According to Entman (1993), to frame is to select certain aspects of a perceived reality and make them more salient in a communication text in order to define problem, diagnose causes, make moral judgments and suggest remedies. In addition, a frame can be located in the communicator, the text, the receiver and the culture. Entman's definition suggests that framing process and analysis can be operated at different levels. At the cultural level, frames are shared beliefs or common sense exhibited in the discourse and thinking of most people within that cultural arena. Frames at the levels of the communicator, the text, and the receiver, although involving the same features of selection and salience, merit further explications for a study in the field of mass communication.

Media frames. Researchers have used the concept of media frames to refer to frames of the communicators as well as their manifestation in news text. For example, Tuchman (1978) and Gitlin (1980) both considered media frames indispensable tools that help journalists to efficiently organize reality for the audiences. To Gitlin (1980), such tools are in effect persistent patterns of cognition, interpretation, and presentation employed by journalists in their working routines. Their process of packaging information also involves selection, emphasis and exclusion. At the level of news text, media frames refer to the implicit story line or the central organizing idea for making sense of relevant events (Gamson & Modigliani, 1987). In this sense media frames are constructed from and embodied in the metaphors, catchphrases and other symbolic devices (Gamson & Modigliani, 1987; Entman, 1991).

Audience frames. Frames on the receiving end of the news texts are generally termed as audience frames. Frames are "the mental representations that result from contact with a news frame" (Entman, 1991, p.7). A frame can be considered as a special type of schema or scripts from a cognitive standpoint (McLeod, Kosicki, Pan, & Allen, 1987). Entman (1991) also used "event-specific schemata" to call the mental representations that guides individuals' interpretation and processing of information about a news event.

Audience frames are mostly viewed as a product of the interaction between media frames and individuals' own existing knowledge bases (Kinder & Sanders, 1990; Pan & Kosicki, 1993). Characteristics of news text, or media frames can set the limits and parameters for audience members' interpretive activities, but audiences are also viewed active when interpreting news (Pan & Kosicki, 1993). In effect, McLeod, Kosicki, and McLeod (1994) have pointed out polysemy as one feature of the audience frames.

Media Framing Effects and the Conditional factors

Media Framing Effects. The term media framing effects now refer to the impact of presence or absence of news frames on audience sense-making of the news object. Many researchers have noted the reciprocal relationship between media frames and audience frames (Entman, 1991; McLeod, Kosicki, & McLeod, 1994; Pan & Kosicki, 1993), but few empirical investigations of the effects of real-world media frames on audience frames are available (Gamson, 1992; Neuman, Just, & Crigler, 1992; Huang, 1995; Haider-Markel & Joslyn, 2001). Recently, more research work on framing has been conducted in experimental settings. These studies examined framing effects through manipulation of news presentations (Iyengar, 1991; Nelson, Clawson, & Oxley, 1997; Price, Tewksbury, & Powers, 1997; Shah, Domke, & Wackman, 1996; Valentino, Beckmann, & Buhr, 2001), and evidence accumulated to date has revealed a combination of both strong and limited framing effects.

Results from experimental studies mostly showed significant framing effects on audiences' cognitive responses and opinions toward public policies. For instance, Iyengar's (1991) studies found that episodic news frames lead viewers to attribute responsibility of social problems to individuals rather than societal factors, which indirectly reduced public support for social welfare programs, but thematic news frames have the opposite effects. News employing other framing conditions, such as human interest, conflict, and consequences also demonstrated significant impact on readers' thought-listing responses and evaluative implications (Price, Tewksbury, & Powers, 1997; Valkenburg, Semetko, & Vreese, 1999). In the case of a civil liberties conflict, Nelson, Clawson and Oxley (1997) discovered that people who watched the free speech story expressed more tolerance for the conflict than those who watched the public order story.

But results from comparisons of real-world media frames and audience frames suggest a less strong role of media framing. Even though media and audience frames might overlap to a certain degree, evidence indicated that audiences often actively framed and interpreted public issues reported in the news media (Gamson, 1992; Huang, 1995; Newman, Just, & Crigler, 1992).

When Gamson (1992) compared the media coverage of several controversial issues with related discussions of working-class people, he found that while media frames did find their way into people's conversation, people also used popular wisdom and their experiential knowledge to understand the issues. Neuman, Just and Crigler (1992) provided further evidence of the disjuncture between public and media frames. They compared media content with the depth interviews, and saw very different priorities between media and audience agenda. Their depth interviews illustrated that the audience often drew on their experiences and impressions from various sources when making sense of social issues. Another study using the Hill-Thomas controversy as the test case also showed that media and audience frames differed in ranking and components, and people were active in choosing their preferred perspectives (Huang, 1995).

The stronger role of media frames in experimental studies is probably due to the highly confined and distinct information input in the artificial settings. Moreover, the short time lag between content exposure and thought elicitation may contribute to the linkages of news frames and the audience's issue understanding. On the other hand, as people's real-world information environments are much more diverse, findings from studies conducted in natural context generally suggest that the audience's eventual constructions are the product of negotiation between the news texts and individual resources.

Despite the subtle differences in the implications of the media role, studies from the above two threads both provided some observations of the contingent nature of framing effects. Researchers searched possible contingent factors at individual-level differences such as socioeconomic background (Huang, 1995; Iyengar, 1991), political involvement (Iyengar, 1991), issue engagement (Gamson, 1992), event knowledge, media use (Huang, 1995), and partisanship (Haider-Markel & Joslyn, 2001; Huang, 1995; Iyengar, 1991; Valentino, Buhr, & Beckmann, 2001). Evidence of these studies is not yet conclusive. The following part will summarize these findings.

The Conditional factors. Among the socioeconomic variables, age was found to be related to thematic framing (Iyengar, 1991) and the adoption of certain media frame (Huang, 1995). Education and income were correlated with the adoption of media frames, although the impacts varied with types of frames (Huang, 1995). In a recent study, those with less education (less than a college degree) were found demobilized and alienated by strategy-based coverage (Valentino, Buhr, & Beckmann, 2001). But gender was unrelated to the magnitude or the adoption of media frames (Iyengar, 1991; Huang, 1995).

Previous research indicates that prior knowledge level on a topic is the most important predictor of later knowledge acquisition about the topic (Robinson & Levy, 1986). Many researchers on framing also postulated that political involvement, issue engagement and other cognitive resource variables might be related to framing effects. Using political participation, political interest, information and frequency of television news exposure as indicators of political involvement, Iyengar (1991) found that more interested viewers were more affected by thematic framing when attributing causal responsibility for poverty. In addition, more interested, more informed and more participant viewers were more affected by thematic framing when attributing treatment responsibility for crime and terrorism.

Gamson (1992) also found that level of issue engagement, measured by issue interest, frequency in discussion, and whether the audience heard or read about the issue, was related to resource strategy. Engaging audiences were more likely to have prior knowledge of media discourse that would become more accessible for their conversational use. Huang (1995) found that knowledge of current events strongly predicted the adoption of primary media frames, but media use played a less significant role in frame choice.

Partisanship was an important contingent factor in several studies. Political predispositions have been pointed out to be significant intervening variables between opinion and incoming information (Converse, 1964). Iyengar (1991) further argued that partisanship could insulate the audience from inconsistent cues provided by news frames, and lead to particular attributions of responsibility. Evidence from his experiments confirmed that partisanship was the most relevant characteristic for both causal and treatment attribution, with Democrats more responsive to thematic framing than Republicans. In another study, Haider-Markel and Joslyn (2001) also found that partisans showed significant resistance to media frames embedded with opposite political orientation.

In addition to dispositional characteristics at individual level, the nature of issues is considered to be operative in the mechanisms of framing effects. (Iyengar, 1991; Gamson, 1992). Iyengar (1991) showed that the relationship between media frames and audience frames is contingent upon the issues under study; moreover, he conjectured that people are less susceptible to framing effects when the issue is highly familiar. Gamson's (1992) study further indicated that the resource strategy people used for meaning constructions varied across issues. On closer or more proximate issues such as affirmative action, most groups began with experiential knowledge, and integrated popular wisdom and media discourse in their discussions. In contrast, on more distant issues such as Arab-Israeli conflict and nuclear power, people almost always began with media discourse, and only a minority followed an integrated resource strategy. Gamson (1992) demonstrated a significant overall relationship between issue proximity and the tendency to use an integrated resource strategy, but he also noted it was stronger for some issues than others. On nuclear power, although relatively fewer people in his study viewed it as a proximate issue, but when they did, most would develop an integrated resource strategy.

Another possible factor other than individual differences is the nature of media environment. On the case of the Hill-Thomas controversy, Huang (1995) found that although the media were powerful in setting the limits for the audience to see the event, the media and audience frames differed in their ranking and contents. Moreover, media exposure did not play a significant role in frame choice. She conjectured these might result from the fact that the media were only one of the audience's information sources. Besides, the effects of various frames in the heterogeneous media environment might be confounded or canceled out.

Along the same line, if framing effects possibly confounded could fix the range of audience frame choice in a heterogeneous media environment, it is reasonable to expect stronger framing effects in a homogeneous media environment. As evidence in this regard is scant, this study will explore whether different media environments, which vary on the dimension of frame homogeneity and heterogeneity, may produce different framing effects in actual context. Two research questions are addressed here. First, do media framing effects differ across homogenous and heterogeneous media environments? Second, what types of factors predict the audience's adoption of media frames in a homogeneous and a heterogeneous media environment?

A media environment of an issue here is defined as an information environment built by the media when constructing a reality of the specific issue. The differentiation between a homogeneous and a heterogeneous media environment in this study is made according to the distribution of media frames. A media environment which provides one or few dominant media frames is considered as a homogeneous media environment. In contrast, a media environment that provides a variety of media frames with a multi-modal distribution is considered as a heterogeneous environment.

To answer the research questions, this study first used two issues in the real-world situation as test cases to investigate whether the media environment each formed differed on the dimension of frame homogeneity and heterogeneity. The next step was to conduct comparisons between media frames and audience frames in both cases to examine possible effects of news frames on audience frames in the two media environments. Finally, audience factors such as social backgrounds, event knowledge, and media use patterns found to be related to framing effects in previous studies (Gamson, 1992; Huang, 1995; Iyengar, 1991) would be examined to see if they exhibit different conditional influence on frame effectiveness in the two media environments.

Backgrounds of Issues under Study

As this study aims to examine the impact of different media environments on the audience's meaning constructions, at least two issues are required for this investigation. The cases of the *On Taiwan* controversy and the Fourth Nuclear Power Plant dispute were eventually selected as both received a lot of media attention and the media environment each created appeared different in the degree of frame diversity. These two events became the headline news in Taiwan's news media in the years of 2000 and 2001, and both have unleashed a storm of controversy in the society of Taiwan.

The *On Taiwan* controversy resulted from the content of *On Taiwan*, a comic book with political commentary written by Kobayashi Yoshinori, a Japanese author. The book is about Taiwan's history, culture and national identity based on the author's observations and interviews with Taiwan's politicians, businessmen and general public. The controversy mainly centered on Kobayashi's accounts of the so-called "comfort women"--military prostitutes-- for the Japanese army during World War II. As the book described comfort women from Taiwan as voluntary, many people in Taiwan felt infuriated with these remarks and some even called for the banning of the book.

The other issue in this study is the Fourth Nuclear Power Plant dispute. The Fourth Nuclear Power Plant project has been a source of controversy and the focus of protests from environmental activists in the society of Taiwan since 1980s. The recent dispute over the project heated up after the long-time opposition party DPP (Democratic Progressive Party) took power and cancelled the project. But the cancellation provoked a tremendous conflict with opposition legislators who made up a majority in the legislature. The political gridlock even caused several government officials to quit, including former Premier Tang Fei.

Both events have been covered intensely by the media, and both happened to be on the decline by the first half of March 2001. So the audience survey was conducted in the middle of March 2001.

Research Methods

Media Content

Media Selection

This study chose newspaper coverage for analyzing media frames of both events.

Thus, respondents who considered newspapers as major source of news information were selected for the audience survey. The three newspapers the survey respondents most likely to read were chosen for content analysis. These three newspapers, including *China Times*, *United Daily,* and *Liberty Times*, are also the leading newspapers in the Taiwan market (Government Information Office, R. O. C., 2001).

Media Coverage

News Coverage of the On Taiwan Controversy

When the Japanese edition of the comic book *On Taiwan* was published in Japan in November 2000, the news media in Taiwan already noticed the event. However, the news media did not pay much attention to the book until its Chinese edition was released in Taiwan in February 2001. Most news stories on the *On Taiwan* controversy appeared between late February and early March 2001. This study collected news items on the controversy in the three newspapers that appeared between December 1, 2000 and March 11, 2001. News stories and editorials on the controversy printed in the front section (usually 15 pages in total) were all included, except for the letters to the editor. A total of 398 news items were analyzed, including 158 items from *China Times*, 154 items from *United daily*, and 86 items from *Liberty Times*.

News Coverage of the Fourth Nuclear Power Plant Dispute

The dispute over the Fourth Nuclear Power Plant project in Taiwan dates back to 1980s. The Taiwan Power Company proposed the project under the KMT (the Nationalist Party) rule in 1980, but the project has later become a point of contention between the KMT and the DPP. As a result, government policy over the project has gone through several changes, which often led to extensive media coverage. The project was first halted by the legislature in 1986 because of the opposition of the DPP, but in 1994 the legislature passed a budget for the project and reconfirmed it in 1996.

The plant has been under construction ever since until the political transition in 2000. After the DPP defeated the KMT in the presidential election on March 18, 2000, the elected Chen administration decided to cancel the project. The decision sparked a political maelstrom and even made Chen the target of a recall drive.

As the recent dispute over the Fourth Nuclear Power Plant project began from the Chen administration's decision to cancel the project, this study sampled news stories on the dispute appeared in the three major newspapers between September 15, 2000, the day when the Ministry of Economic Affairs formed a committee to re-evaluate the feasibility of the project, and February 24, 2001, the day anti-nuclear activists demonstrated in Taipei and called for a referendum on the Fourth Nuclear Power Plant after the administration later agreed to resume the construction of the plant. This study used a judgmental sampling technique to select dates when critical events surrounding the dispute took place from the designated period. A total of 41 days were selected. It then analyzed news items on the dispute appeared in the three newspapers on each selected date and its following date, where intensive media coverage of the critical event was expected.

In total, 2,422 news items were analyzed, including 862 items from *China Times*, 727 items from *United Daily*, and 833 items from *Liberty Times*.

Audience Data

The audience data were collected following the decline of both events. The sample was drawn from the phone directories of the Taiwan area through multi-stage random digit dialing procedures. The telephone interviews were conducted by the survey center of the Central News Agency between March 11 and March 13, 2000. The interviews averaged 16.4 minutes and were authenticated by staff of the center. As this study analyzed news stories on newspapers, respondents who were at least twenty years old, read public affairs news coverage on newspapers frequently, and have heard of the issues under study were chosen for further interviews. A total of 555 successful telephone interviews were completed, and the response rate was 56%.

Audience Selection

In order to compare media frames and audience frames, only respondents who expressed opinions toward the *On Taiwan* controversy and the Fourth Nuclear Power Plant dispute were included for analysis. Two open-ended questions were used to obtain the data for audience frames. The wordings of these two questions are as follows:

> "Many people have their own opinions about the book *On Taiwan* and its related issues. What would be your opinions or comments on these issues?"
> "Many people have their opinions about the Fourth Nuclear Power Plant. What would be your opinions or comments on the project?"

Interviewers were instructed to use probes to obtain more responses from respondents. There were 476 respondents who gave comments on the *On Taiwan* controversy, and 510 respondents on the Fourth Nuclear Power Plant dispute. In addition, as media frames were obtained from the three leading newspapers, the study excluded respondents who were not frequent readers of any of these newspapers. This reduced the sample size to 448 for the *On Taiwan* controversy, and 479 for the Fourth Nuclear Power Plant dispute.

Audience Factors.

Individual dispositional factors in the audience survey included social-structural variables, issue-related knowledge, concern for the issues, media use variables and interpersonal discussion on the issues. The measures of these variables were presented in Appendix. Social-structural variables included gender, age, education, income, political party preference and social ideology. Two event-related knowledge variables were obtained by the sum of correct answers to two sets of questions (each contained four) respectively designed for the *On Taiwan* controversy (Alpha= .71) and the Fourth Nuclear Power Plant dispute (Alpha= .58). The media use variables include questions asking the respondent's general media use pattern as well as specific media use on each issue.

Data Analysis

In the content analysis part, the first step was to establish a coding scheme for both media coverage and audience comments on the two cases. All collected news articles were reviewed to get a sense of the media coverage on each case, and specific sub-events in the *On Taiwan* controversy as well as in the Fourth Nuclear Power Plant dispute were first selected respectively as the object of framing. These sub-events were critical news events in the development of both issues. Under each sub-event, a list of categories based on the central organizing ideas found in the news coverage appearing within the period of the sub-event was established. The central organizing idea, or the frame, of each news article was identified by information elements such as facts, contexts, attributions, or consequences in the news coverage. After several more in-depth reviews, the categories and definitions of media frames for each case were established.

Two coders were in charge of the coding task. Two sub-events at most were identified in a news article. Under each sub-event, at most two frames were identified. The same procedure was used for the coding of audience protocols. This study used the Scott's pi formula to compute inter-coder reliability (Scott, 1955) for both media frames and audience frames. The computation was based on a subsample of 10% of the news items and the audience responses for each case. On the case of the *On Taiwan* Controversy, the inter-coder reliability reached .84 for audience frames and .63 for media frames. On the case of the Fourth Nuclear Power Plant, the inter-coder reliability reached .69 for audience frames and .75 for media frames.

Then, a comparison of the distributions among media frames and audience frames for each issue at the aggregate level was conducted. To examine whether the media environment have impact on framing, a further comparison was made to see if the extent the media and audience frames overlap differs between these two cases.

Finally, cross-tabulations were first performed to examine which audience variables were related to the adoption of media frames. These factors were then used as predictor variables in logistic regression models to examine which factor could significantly predict the adoption of media frames.

Results

Comparing Media Environments

On the *On Taiwan* controversy, a list of sub-events and frames under each sub-event was first established. The list contains eight sub-events and 43 frames. The 398 news items collected were analyzed according to the coding scheme. In total, these news items cover 533 sub-events and 761 frames. As some frames shared identical categorical definitions, the original list of 43 frames were further grouped into 18 different types of frames, and the 761 frames identified in the news items were recoded according to the new categories. Results show that these news items focus on only few frames. As seen in Table 1, only the frames of *Historical Truth* (35.6%), *Human Rights* (25.6%), *Taiwanese Identity* (5.5%) and *Political Maneuvering* (5.1%) are over 5% among the 761 frames, but the first two already make up 61.2% of the total frames.

The finding indicates that news coverage on the *On Taiwan* controversy centers on two dominant frames, *Historical Truth* and *Human Rights*. The *Historical Truth* frame focuses on whether the content of *On Taiwan* is distorted and whether the government should investigate the truth. The *Human Rights* frame concentrates on the injustice done to the comfort women and the demands for apologies from Japanese government. The rest of the frames, including *Taiwanese Identity*, which discusses the national identity issue of Taiwanese, and *Political Maneuvering*, which conceives the controversy as a political struggle between opposing parties, are all marginalized by the media. As the media do not provide a wide dispersion of representation of frames, the news content on the issue appears less diverse. Thus, the media environment created by the *On Taiwan* controversy can be considered as a homogeneous media environment.

On the case of the Fourth Nuclear Power Plant dispute, eight sub-events and 29 frames were identified. The 2,422 news items cover 2,592 sub-events and 3,733 frames in total. The 3,733 frames were further grouped into 29 different frames. Results show that the percentages of these frames are close, and many are around 5% of the total frames. Table 2 shows that, frames above 4.5% include *Constitutionality* (24.9%), *Political Intervention* (15.6%), *Economic Development* (8.6%), *Dispute over the Recall Law* (7.1%), *Cost-Benefit Analysis of the Fourth Nuclear Power Plant* (6.2%), *Alternative Power Plan* (4.9%), *Decision-Making Processes of the Presidential Office and the Executive Yuan* (4.6%), and *Concern for Social Stability* (4.5%). The *Constitutionality* frames focuses on whether it is constitutional to halt the project. The *Political Intervention* frame refers to the DPP's intervention on policy change as well as criticisms of the government's decision-making on ideological rather than professional grounds. The *Economic Development* frame focuses on the impact of policy change on economy. The *Dispute over the Recall Law* refers to the legal procedures and disputes on the presidential recall. The

*Cost-Benefit Analysis of the Fourth Nuclear Power Plan*t frame focuses on the costs and benefits of canceling the project. The *Alternative Power Plan* frame mainly discusses other alternatives of energy plan. The frame of the *Decision-Making Processes of the Presidential Office and the Executive Yuan* emphasizes the role of the coordination between the Presidential Office and the Executive Department on the dispute. The *Concern for Social Stability* frame refers to the impact the policy change and political standoff may have on social stability.

As the news frames on the dispute are more widely dispersed, the media environment created by the Fourth Nuclear Power Plant dispute can be considered as a heterogeneous media environment.

Comparing Media Frames and Audience Frames

The open-ended responses to the *On Taiwan* controversy from the 448 respondents contain 520 sub-events and 568 frames. These frames were grouped into 12 different types of frames. Likewise, audience responses to this controversy focus on only few frames. The right column of Table 1 shows that the three major audience frames, including *Historical Truth* (41.7%), *Human Rights* (18.3%), and *Overreaction* (15.5%), already make up 75.5% of the total 578 frames. In addition, the rank order of the first two frames is identical with the primary frames of the media coverage on this controversy, and nearly seven out of ten (68.5%) used these two frames to view the *On Taiwan* debate.

On the Fourth Nuclear Power Plant dispute, 484 sub-events and 700 frames were identified from the responses of 479 respondents. These frames were further grouped into 14 different types of frames, and again, the percentages of each frame are close. As seen in the right column of Table 2, frames above 5% of the total include *Safety of the Nuclear Power Plant* (25.1%), *Economic Development* (20.1%), *Domestic Power Supply* (10.1%), *Disposition of Nuclear Waste* (10.0%), *Alternative Power Plan* (8.1%) and *Cost-Benefit Analysis of the Fourth Nuclear Power Plant* (7.4%).

Compared with the media frames, audience also employed a variety of frames when conceiving the power plant issue. However, the types and rank order of the audience major frames are rather different from the primary frames found in the media. The percentage of respondents adopting the primary media frames (the top five media frames) is less than 50% (47.4%). And among the five primary audience frames, only *Economic Development* and *Alternative Power Plant* frames are also primary media frames. The other three primary audience frames, including *Safety of the Nuclear Power Plant*, *Domestic Power Supply*, and *Disposition of Nuclear Waste*, are not identified as primary media frames.

The above findings show that the patterns of audience frames vary across different media environments. In a homogeneous media environment, as created by the *On Taiwan* controversy, the pattern of audience frames is more homogeneous, and the primary frames the audience employed are more identical with the media's primary frames. In contrast, in a heterogeneous media environment, as created by the Fourth Nuclear Power Plant dispute, audience frames are more diversified, but its primary frames are relatively dissimilar to the media's primary frames. These suggest that the framing effects, as reflected in the media's power in constraining the audience's range of viewpoints for seeing news events, are stronger in a homogeneous than a heterogeneous media environment.

Note that, although the result shows that the framing effects of mass media are more powerful in a homogeneous media environment, the audience is still able to develop its own frames for news events whether in a homogeneous or a heterogeneous media environment. For example, on the case of the *On Taiwan* controversy, one of the primary audience frames is *Overreacting* (15.5%), but less than 2% (1.7%) of all the media frames were identified as *Overreacting*. This finding suggests that the media have paid too much attention on the controversy than the audience expected to.

On the case of the Fourth Nuclear Power Plant dispute, while 45.5% of the audience frames are *Dispute over Nuclear Safety, Domestic Power Supply and Disposition of Nuclear Waste*, only 3.5% of all the media frames were identified to be any of the three frames. This suggests that the audience view the power plant dispute in a very different light from the media. The media tend to focus on problems at the macro-level, including the constitutionality of halting construction of the power plant, the political maneuvering of the ruling DPP or the opposition lawmakers, the dispute over the Recall Law, and the cost-benefit analysis of canceling or resuming the power plant project. These concerns are not only remote but also complicated to the audience. In fact, what the audience members are concerned are consequences of policy change on their daily lives. Instead of legal or political considerations, the audience members obviously feel much more concerned about the safety of the nuclear power plant and the condition of power supply on a daily basis, as these are concrete and immediate problems they will face if the government makes any policy changes on the project.

Audience Factors Conditioning Media Framing Effects

This part of analyses first examined the differences in audience variables between media frame adopters and non-adopters in order to infer the possible factors conditioning media framing effects. , In this study, the media frame adopters were the audience who adopted the primary frames of the media coverage. On the *On Taiwan* controversy, the primary media frames were *Historical Truth* and *Human Rights*, for 76.1% of the news items on the controversy used at least one of these two frames.

On the Fourth Nuclear Power Plant dispute, the primary media frames included *Constitutionality, Political Intervention, Economic Development, Dispute over the Recall Law*, and *Cost-Benefit Analysis of the Fourth Nuclear Power Plant*. Among all the news items on the power plant dispute, 79% used at least one of these five frames. The audience variables examined in this part included gender, age, education, income, ideology, political party preference, knowledge for the issues, concern for the issues, media use for public affairs, media use for the issues, and interpersonal communication on the issues.

Results of cross-tabulations in Table 3 show that, in the homogeneous media environment created by the *On Taiwan* controversy, gender ($\chi^2(1) = 2.10$, $p < .10$), concern for the issue ($\chi^2(1) = 8.02$, $p < .01$), attention to newspaper public affairs coverage ($\chi^2(1) = .59$, $p < .10$), and exposure to issue-related news coverage ($\chi^2(1) = 2.77$, $p < .10$), are all related to the adoption of media frames. Male, those who are more concerned about the controversy, read or watch more news coverage on the issue, are more likely to adopt the media frames. However, those who paid more attention to newspaper public affairs coverage are less likely to adopt media frames.

In logistic regression analysis, concern for the issue and attention to newspaper public affairs coverage both significantly predict to the adoption or non-adoption of media frames. Results in Table 4 show that the odds of adopting media frames are 9% increase if there is a 1-unit increase in the concern for the issue scale. But the odds of adopting media frames are 8.6 % decrease if there is a 1-unit increase in the attention to newspaper public affairs coverage scale. Respondents are more likely to see the *On Taiwan* controversy from the historical truth or the human rights perspectives, if they are more concerned about the issue. However, if they pay more attention to newspaper public affairs coverage, they are less likely to adopt the media frames.

In the heterogeneous media environment as created by the Fourth Nuclear Power Plant dispute here, results of cross-tabulations in Table 5 show that, political party preference, issue-related knowledge, and exposure to issue-related news coverage are related to the adoption of media frames. Non-DPP supporters are more likely to adopt the media's primary frames ($\chi^2(1) = 19.73$, $p < .001$). That is, DPP supporters, compared with other people, tend not to employ the media frames. Those with more knowledge about the dispute are less likely to adopt the media frames ($\chi^2(1) = 2.10$, $p < .10$), but those who read or watched more news coverage about the dispute are more likely to employ the media frames ($\chi^2(1) = 6.90$, $p < .05$).

Partisanship, issue knowledge, and exposure to issue coverage all significantly predict to the likelihood of adopting media frames. Results from logistic regression analysis in Table 6 show that the odds of adopting the media frames is about 36% higher when the respondent's political stance is closer to the opposition parties such as the KMT, the People's First Party, the New Party, or is an independent. This also means, the odds of adopting the media frames are about 64% lower for DPP supporters than the odds for others. Moreover, the odds of adopting media frames are 13% increase if there is a 1-unit increase in the exposure to news coverage of the dispute scale. But the odds of adopting media frames are 14.1 % decrease if there is a 1-unit increase in the issue knowledge scale. When the respondents read or watched more news coverage of the dispute, they are more likely to adopt the media frames, but when they have more knowledge about the dispute, they are less likely to adopt media frames.

Discussion

The media framing analyses show that news content diversity varies across the two issues under study. As the news coverage of *On Taiwan* appears less diverse than the news coverage of the Fourth Nuclear Power Plant, the media environments these two issues formed differ on the dimension of frame homogeneity and heterogeneity. Can difference in the nature of media environment on this dimension condition the effects of media framing? Evidence seems to suggest it can. Results show that the types and priorities of audience frames overlap with those of media frames to a great degree in the homogeneous media environment, but only to a limited degree in the heterogeneous media environment. Framing effects appear more powerful in a homogeneous than in a heterogeneous media environment.

The evidence also suggests that in a media environment where a multiplicity of frames are offered, the audience members are more likely to take cues aligned with their own concerns when commenting public policy. Thus, for the media to fulfill the tasks required in a democratic system, the normative function to provide a terrain of diverse viewpoints for public deliberation is indispensable for an autonomous citizen.

It is possible that the nature of issues is operative in the mechanisms of framing effects. Previous research (1992) has suggested that framing effects may be issue-specific (Iyengar, 1991) or vary with issues proximity (Gamson, 1992). The two issues under study here are also of different nature. The *On Taiwan* controversy is a remote issue about the comfort women in WWII when Taiwan was a Japanese colony. As most people (people under 50) in Taiwan do not have personal experience of Japanese colonialism, they can only rely on the media for information about the issue, especially if they did not read the comic book. Further, there is no personal impact regarding the government's decision to ban the author from visiting Taiwan. The low level of issue proximity may explain the extensive overlap between audience frames and media frames and why the audience does not integrate more experiential knowledge when making sense of the controversy. The only exception is the *Overreaction* frame, but it is more related to the audience's evaluation of media performance rather than the issue itself.

The Fourth Nuclear Power Plant dispute, on the other hand, although seems distant on the surface, does bring out consequences on people's daily lives if any policy changes are made. Evidence from audience frames indicates the audience members do sense such effects on their livelihood, including personal safety and power supply. Thus, although the media marginalize these sides of the issue, the audience can still draw on personal experiences (e.g., the stability of power supply in daily life) and impressions (e.g., foreign news report on nuclear power plant disasters) when making sense of the dispute. Similar to Gamson's (1992) finding, the audience is more likely to adopt an integrated strategy of resource when certain aspects of the issue show personal consequences. And it appears that the audience's emphases on more pressing personal concerns help to mitigate the effects of media frames.

However, the conditional influence of the nature of issue and the nature of media environment on media framing effects may be confounded. In this study, the media environment for the distant *On Taiwan* issue is relatively homogeneous whereas the media environment for the more proximate nuclear power plant issue is heterogeneous. Thus, the audience members' tendency to employ media frames on the *On Taiwan* issue could result from the distant nature of this issue, or the homogeneous media environment where they are situated, or both. Likewise, the audience members' emphases on frames alternative to media discourse on the nuclear power plant dispute may be due to the proximate component of the issue or the heterogeneous media environment, or both. Future investigations need to include issues with a different set of characteristics to clarify whether the nature of issue and the nature of media environment have independent influence on framing effects. For instance, a distant issue with a heterogeneous media environment and a proximate issue with a homogeneous media environment would be required for further comparisons.

As to the conditional influence of the audience factors on framing effects, results show that audience factors conditioning the media framing effects are different for the two media environments. In the homogeneous media environment of the *On Taiwan* controversy, those with greater concern for the issue are more likely to adopt the media frames. They are more likely to see the issue from the historical truth or the human rights perspectives. The result may be due to the high correlation between issue concern and exposure to issue-related news coverage ($r = .65, p < .001$). Those who are more concerned about the *On Taiwan* controversy are more likely to read or watch more news coverage about the issue and have prior knowledge of media discourse on the issue. As the audience lacks experiential knowledge about the issue, the two dominant frames the media center on may become more accessible for the audience's issue constructions. This finding resonates with Gamson's (1992) observation that media discourse is more likely to serve as conversational cues for engaging people.

However, when people pay more attention to newspaper coverage on public affairs, they are less likely to adopt the media frames. Those who show more attention to newspaper coverage on public affairs may reflect their general interest in public affairs. Their broader observations of public discourse on social issues perhaps enable them to be more sensitive to the homogeneity of the media environment on this case, and are thus more likely to become independent thinker.

In the heterogeneous media environment of the nuclear power plant dispute, partisanship is the strongest predictor to the adoption of media frames. DPP supporters are less likely to adopt the media frames than non-DPP supporters are. A look at the content of the primary media frames reveals the reason. The five primary media frames include *Constitutionality, Political Intervention, Economic*

Development, *Dispute over the Recall Law* and *Cost-Benefit Analysis*. These are macro-level concerns raised by the opposition parties for attacking the ruling DPP's decision to cancel the nuclear power plant project. Members of the opposition parties have criticized the DPP's decision unconstitutional and illegal, the costs of canceling the project too high, and have attempted to recall the president. In contrast, the DPP has long adopted an anti-nuclear energy platform and its grounds to halt the plant included the problems of nuclear waste and safety. It is unlikely that supporters of the DPP will see the power plant dispute in the same light as the opposition parties. But for non-DPP supporters, adopting media frames is consistent with their political orientation.

The evidence regarding partisanship here is consistent with some previous observations. Both Iyengar (1991) and Haider-Markel and Joslyn (2001) found that partisanship conditions the effects of media framing as partisans are more responsive to frames congruent with their political orientation. However, as this power plant case and the other issues in previous studies such as gun policy in the States are also battlegrounds for political parties, the audience members may find it more easily to take cues provided by parties closer to their own propensities to perceive the issue. This may increase the influence of partisanship on frame effectiveness. For issues without apparent contentions from opposing political camps, partisanship may not have impact on the effectiveness of framing. As seen from the other issue in this study, the *On Taiwan* controversy, because contentions around the issue are much less aligned with any party platforms, partisanship does not emerge as a significant contingent factor of media framing effects. Thus, the conditional influence of partisanship on framing effects is also issue-specific, and it is stronger when the issue is a point of contentions between opposing political parties.

The other two significant predictors to media frame adoption in the heterogeneous media environment are exposure to news coverage on the power plant dispute, and knowledge about the dispute. More exposure to news coverage on the issue increases the chance of adopting media frames, but more knowledge about the dispute reduces the chance of adopting media frames. Respondents who read or watched more news on the issue are likely to get acquainted with media discourse, which in turn may become more accessible for constructing issue reality. This may explain why they tend to adopt media frames. But more knowledge about the dispute may reflect the respondent's greater issue engagement and the capacity of acquiring different views on the issue. Armed with a range of diverse considerations, the respondent may become more resistant to primary media frames.

Concluding Remarks

In conclusion, this study finds that factors at both the individual level and the media environment level can condition the influence of media framing effects. First, the effects of media framing vary with media environments. Framing effects are stronger in a homogeneous than in a heterogeneous media environment. When the audience members are exposed to a multiplicity of frames, they are able to actively frame and interpret a controversial issue from perspectives of their own concerns. But when only few dominant frames are provided, and the issue is distant, the audience members are more constrained by the media discourse in their issue constructions.

Secondly, several factors at the individual level are found to have impact on frame effectiveness, but the patterns of their conditional influence differ in the two media environments. Partisanship shows stronger impact on the effectiveness of framing in a heterogeneous media environment, although this may be due to the political components of the issue involved rather than the content diversity in the media. Other contingent factors including issue interest, knowledge and media use, also exhibit different functions in the two media environments. Issue interest increases the chance of adopting media frames in a homogeneous media environment, but more knowledge about the specified issue reduces the chance of adopting media frames in a heterogeneous media environment. Compared to issue interest, the knowledge variable may indicate the audience members' more substantial information acquisition patterns. When stimulated by a diverse range of viewpoints, people with greater level of issue knowledge may be more likely to reflect upon different perspectives of the issue, and then develop critical thinking in the process of meaning constructions.

The role of media use in the operation of framing effects is more complex. The direction of influences of the two media use variables varies across the two environments. Attention to newspaper coverage of public affairs reduces the chance of adopting media frames in a homogeneous media environment, but exposure to news coverage on the issue increases the chance of adopting the media frames in a heterogeneous media environment.

As discussed above, these two types of media use may reflect different degrees of the audience's issue involvement. The audience members' greater attention to public affairs coverage in newspapers give them more chance to acquire more in-depth reports and analyses of current issues, and have more reflections upon these issues. Thus, even in a homogeneous media environment, greater attention to newspaper public affairs coverage still results in greater chance for the audience members to develop perspectives of their own toward the specific issue. But when the audience members are already situated in a heterogeneous media environment, exposure to news coverage on the issue only may assist them to accumulate more media discourse on the issue but not to reflect upon the issue, and therefore increases their chance of adopting media frames. Perhaps only with a media environment that provides a multiplicity of views and an engaging attitude toward public issues on the audience side can members of the society cultivate the autonomy and sophistication required for deliberating public issues in a democratic political system.

References:

Converse, P. E. (1964). The nature of beliefs systems in mass publics. In D. E. Apter (Ed.), *Ideology and discontent* (pp. 206-261). New York: Free Press.

Entman, R. M. (1991). Framing U.S. coverage of international news: Contrasts in narratives of the KAL and Iran Air Incidents. *Journal of Communication 41*, 6-27.

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication, 43*, 51-58.

Gamson, W. A. (1992). *Talking politics.* Cambridge, MA: Cambridge University.

Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion: A constructionist approach. *American Journal of Sociology, 95*, 1-37.

Gitlin, T. (1980). *The whole world is watching: Mass media in the making and unmaking of the new left.* Berkeley, CA: University of California Press.

Government Information Office, Republic of China (2001). The development of the communication industry in the Republic of China. http://www.gio.gov.tw /info/asia-pacific/media-1.html

Gurevitch, M., & Blumler, J. G. (1990). Political communication systems and democratic values. In J. Lichtenberg (Ed.), *Democracy and the mass media* (pp. 269-289). Cambridge: Cambridge University Press.

Haider-Markel, D. P., & Joslyn, M. R. (2001). Gun policy, opinion, tragedy, and blame attribution: The conditional influence of issue frames. *Journal of Politics, 63*, 520-543.

Herman, E. S., & Chomsky, N. (1988). Manufacturing consent: The political economy of the mass media. New York: Pantheon Books.

Huang, K. S. (1995). A comparison between media frames and audience frames: The case of the Hill-Thomas controversy. Unpublished doctoral dissertation, University of Wisconsin-Madison.

Iyengar, S. (1991). *Is anyone responsible? How television frames political issues.* Chicago, IL: The University of Chicago Press.

McCombs, M., Shaw, D. L., & Weaver, D. (1997). *Communication and democracy: Exploring the intellectual frontiers in agenda-setting theory.* Mahwah, NJ: Erlbaum.

McLeod, J. M., Kosicki, G. M., & McLeod, D. M. (1994). The expanding boundaries of political communication effects. In J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research* (pp. 123-162). Hillsdale, NJ: Lawrence Erlbaum.

McLeod, J. M., Kosicki, G. M., Pan, Z., & Allen, S. G. (1987). Audience perspectives on the news: Assessing their complexity and conceptual frames. Paper presented at the annual conference of the Association for Education in Journalism and Mass Communication, Austin, Texas.

Nelson, T. E., Clawson, R. A., & Oxley, Z. M. (1997). Media framing of a civil liberties conflict and its effect on tolerance. *American Political Science Review, 91*, 567-583.

Nelson, T. E., & Kinder, D. R. (1996). Issue framing and group-centrism in American public opinion. *Journal of Politics, 58*, 1055-78.

Neuman, W. R., Just, M. R., & Crigler, A. N. (1992). *Common knowledge: News and the construction of political meaning.* Chicago, IL: The University of Chicago Press.

Pan, Z., & Kosicki, G. M. (1993). Framing analysis: An approach to news discourse. *Political Communication, 10,* 55-76, Price, V., Tewksbury, D., & Powers, E. (1997). Switching trains of thought: The impact of news frames on readers' cognitive responses. *Communication Research, 24*, 481-506.

Reese, S. D. & Buckalew, B. (1995). The militarism of local television: The routine framing of the Persian Gulf War. *Critical Studies in Mass Communication, 12*, 40-59.

Scott, W. A. (1955). Reliability of content analysis: The case of nominal scale coding. *Public Opinion Quarterly, 19*, 321-325.

Robinson, J. P., & Levy, M. R. (1986). *The main source: Learning from television news*. Beverly Hills, CA: Sage.

Tewksbury, D., Jones, J., Peske, M. W., Raymond, A., & Vig, W. (2000). The interaction of news and advocate frames: Manipulating audience perceptions of a local public policy issue. *Journalism & Mass Communication Quarterly, 77*, 804-829.

Tuchman, G. (1978). *Making news: A study in the construction of reality*. New York: Free Press.

Valentino, N. A., Buhr, T. A., & Beckmann, M. N. (2001). A spiral of cynicism for some: The contingent effects of campaign news frames on participation and confidence in government. *Political Communication, 18*, 347-367.

Table 1:
A Comparison of Primary Frames between Media Coverage and the Audience—
The Case of the *On Taiwan* Controversy

Frame	Newspapers (%)	Audience (%)
Historical Truth	**35.6 (271)**	41.7 (237)
Human Rights	**25.6 (195)**	18.3 (104)
National Identity	5.5 (42)	4.1 (23)
Political Maneuvering	5.1 (39)	4.1 (23)
Overreaction	1.7 (13)	15.5 (88)
Total	(761)	(568)

Notes:
Those printed in boldface refer to primary media frames. Percentages refer to the proportions in total frames. Numbers in parenthesis are the number of frames. Only primary media and audience frames were listed in the table. The percentage and number for each frame in corresponding column were also listed for comparison.

Table 2:
A Comparison of Primary Frames between Media Coverage and the Audience—
The Case of the Fourth Nuclear Power Plant Dispute

Frame	Newspapers (%)	Audience (%)
Constitutionality	**24.9 (928)**	3.9 (27)
Political Intervention	**15.6 (581)**	3.6 (25)
Economic Development	**8.6 (320)**	20.1 (141)
Dispute over the Recall Law	**7.1 (265)**	.0 (0)
Cost-Benefit Analysis	**6.2 (230)**	7.4 (52)
Nuclear Power Safety	3.5 (129)	25.1 (176)
Power Supply	3.2 (120)	10.1 (71)
Disposition of Nuclear Waste	2.6 (97)	10.0 (70)
Alternative Power Plans	4.9 (181)	8.1 (57)
Total	(3733)	(700)

Notes:
Those printed in boldface refer to primary media frames and audience frames. Percentages refer to the proportions in total frames. Numbers in parenthesis are the number of frames. Only primary media and audience frames were listed in the table. The percentage and number for each frame in corresponding column were also listed for comparison.

Table 3:
Proportions Adopting Primary Media Frames within Each Subgroup – The Case of the *On Taiwan* Controversy

Subgroups	Lo	Hi	χ^2
Gender (Male/Female)	37.3 (167)	31.3 (140)	2.10*
Age	37.2 (165)	31.4 (139)	.24
Education	34.5 (154)	34.2 (153)	.76
Income	39.3 (112)	30.2 (86)	.05
Ideology (Liberal/Conservative)	52.3 (216)	16.5 (68)	.02
Political Party Preference (DPP/Non-DPP)	17.0 (71)	52.8 (220)	.00
Concern for the Event	33.3 (148)	34.7 (154)	8.02***
Issue-related Knowledge	29.6 (133)	39.0 (175)	1.59
Exposure to Newspaper Public Affairs Coverage	38.4 (168)	30.0 (131)	.86
Attention to Newspaper Public Affairs Coverage	35.8 (157)	32.3 (142)	.59*
Exposure to Television Public Affairs Coverage	28.9 (124)	39.6 (294)	1.33
Attention to Television Public Affairs Coverage	28.9 (123)	39.7 (169)	1.18
Exposure to Issue-related News Coverage	31.8 (140)	36.1 (159)	2.77*
Attention to Issue-related News Coverage	30.5 (134)	37.7 (166)	1.09
Discussion on the Issue	40.9 (180)	28.0 (123)	.04

Note: *** $p < .01$, ** $p < .05$, * $p < .10$

The total number of primary media frame adopters was 307. Levels of "Low" and "High" were divided by mean value except for gender, ideology, and political party preference. These three variables were divided by attributes indicated in parenthesis.

Table 4:
Determinants of the Adoption of Media Frames—
The Case of the *On Taiwan* Controversy

	Adoption of Media Frames		
Audience Variables	Coefficients	Wald	Exp (B)
Gender (Male)	-.291	1.798	.747
	(.217)		
Concern for the Issue	.087*	3.400	1.090
	(.047)		
Exposure to Newspaper Public Affairs Coverage	-.090**	4.424	.913
	(.043)		
Exposure to Event-related News Coverage	.072	1.949	1.075
	(.052)		
Constant	.573	3.277	1.774
	(.317)		
Pseudo R Square	.05		
Chi Square	17.09***		
Log Likelihood	527.77		
Number of Cases	431		

Notes: $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .10$

Coefficients are Logistic regression coefficients. Standard errors are in parenthesis. The adoption of media frames variable is coded as 1 if the respondent adopted media frames. Gender is a dummy variable with males coded 1. Cases included in the analysis are those with valid data on the adoption of media frames and the four independent variables.

Table 5:
Proportions Adopting Primary Media Frames within Each Subgroup –
The case of the Fourth Nuclear Power Plant Dispute

Subgroups	Lo	Hi	χ^2
Gender (Male/Female)	26.8 (128)	20.7 (99)	.43
Age	26.4 (125)	21.1 (100)	.59
Education	22.3 (106)	25.4 (121)	2.14
Income	27.7 (83)	21.7 (65)	.02
Ideology (Liberal/Conservative)	37.6 (165)	9.8 (43)	2.94
Political Party Preference (DPP/Non-DPP)	7.8 (35)	39.8 (179)	19.73^{***}
Concern for the Issue	19.8 (94)	27.8 (132)	1.40
Issue-related Knowledge	24.0 (115)	23.4 (112)	2.10^{*}
Exposure to Newspaper Public Affairs Coverage	24.7 (115)	22.8 (106)	1.14
Attention to Newspaper Public Affairs Coverage	24.8 (116)	22.7 (106)	.01
Exposure to Television Public Affairs Coverage	19.0 (87)	29.2 (134)	.05
Attention to Television Public Affairs Coverage	18.2 (83)	29.9 (136)	1.33
Exposure to Issue-related News Coverage	15.9 (75)	31.6 (149)	6.90^{**}
Attention to Issue-related News Coverage	22.3 (106)	25.3 (120)	2.54
Discussion on the Issue	24.9 (118)	22.6 (107)	1.30

Notes: $^{***}p < .01$, $^{**}p < .05$, $^{*}p < .10$

The total number of primary media frame adopters was 227. Levels of "Low" and "High" were divided by mean value except for gender, ideology, and political party preference. These variables were divided by attributes indicated in parenthesis.

Table 6:
Determinants of the Adoption of Media Frames—
The Case of the Fourth Nuclear Power Plant Dispute

Audience Variables	Adoption of Media Frames Coefficients	Wald	Exp (B)
Political Party Preference (DPP Supporters)	-1.032***	19.393	.356
	(.234)		
Exposure to Issue-related News Coverage	.123***	9.226	1.130
	(.040)		
Issue-related Knowledge	-.152*	3.021	.859
	(.088)		
Constant	-.323	1.026	.724
	(.319)		
Pseudo R Square	.09		
Chi Square	30.60***		
Log Likelihood	583.89		
Number of Cases	443		

Notes: *** p < .01, ** p < .05, * p < .10

Coefficients are Logistic regression coefficients. Standard errors are in parenthesis. The political party preference variable is a dummy variable with DPP supporters coded 1. Cases included in the analysis are those with valid data on the adoption of media frames and the four independent variables.

456

Appendix

The Measures of Audience Variables

Gender. Male was coded as "1" and female as "0."

Education. Education was obtained by asking the respondent's highest degree.

Income. The income variable measured respondent's estimated annual income in NT $50,000 (U.S. $1,471) increments, ranging from "under NT$200,000 (U.S. $5,882)" to "more than NT $1,010,000" (U.S. $29,706).

Political Party Preference. This variable was obtained by the following question: "In our society, most people have their stance toward politics. Generally speaking, which party's platform is closer to yours?" Response items included "the Nationalist Party (KMT)," "the Democratic Progressive Party (DPP)," "the People First Party (PFP)," "the New Party," "Others" and "Independent."

Social Ideology. Social ideology refers to the respondent's ideological orientation toward politics and social issues in general along the liberal-conservative dimension. The variable was obtained by asking the respondents two questions. First, they were asked whether they considered themselves relatively more liberal or more conservative compared with most others in the society, and then, they were asked whether they considered themselves very liberal (or conservative) or somewhat liberal (or conservative).

Issue-related Knowledge. The variable was measured by the sum of correct answers to four questions related to each issue. The questions for the *On Taiwan* controversy included: (1) What is the nationality of the author of *On Taiwan*? (2) Which Taiwanese business leader's remarks on the comfort women issue was quoted in *On Taiwan*? (3) Which department of the Executive Yuan (administration) once announced that the author of *On Taiwan* was temporarily banned from entering Taiwan? (4) An advisor to the president returned to support the author of *On Taiwan* last week. Can you tell me her name?

The questions for the Fourth Nuclear Power Plant dispute included: (1) Premier Chang Chun-hsiung last month announced the final decision on the future of the Fourth Nuclear Power Plant. Can you tell me whether he decided to halt construction, to resume construction, or to change the site of the Fourth Nuclear Power Plant? (2) In which county is the Fourth Nuclear Power Plant located? (3) Which country, in addition to Japan, supplies the main equipment for the Fourth

Nuclear Power Plant? (4) There was an anti-nuclear demonstration about two weeks ago, can you tell me what the anti-nuclear groups offered to solve the Fourth Nuclear Power Plant dispute?

Newspaper Use for Public Affairs. Two questions were used to measure the respondent's exposure and attention to newspaper coverage of public affairs. Respondents were asked to choose a number between one and ten, where "one" means "rarely read" or "little attention," and "ten" means "all the time" or "very close attention."

Television Use for Public Affairs. Two questions were used to measure the respondent's exposure and attention to television news coverage of public affairs. Respondents were asked to choose a number between one and ten, where "one" means "rarely watch" or "little attention," and "ten" means "all the time" or "very close attention."

Newspaper Use for the Issues. Using the same ten-point scale, two sets of questions (four in total) were used to measure the respondent's exposure and attention to newspaper coverage of *On Taiwan* controversy and the Fourth Nuclear Power Plant dispute, respectively.

Television Use for the Issues. Using the same ten-point scale, two sets of questions (four in total) were used to measure the respondent's exposure and attention to television coverage of *On Taiwan* controversy and the Fourth Nuclear Power Plant dispute, respectively.

Interpersonal Discussion on the Issues. Respondents were asked how often they have discussed the *On Taiwan* controversy with their friends or family, and were asked to choose a number on the same ten-point scale where "one" means "rarely" and "ten" means "all the time." This question was used to measure interpersonal communication on the Fourth Nuclear Power Plant dispute as well.

Concern for the Issues. This variable measured the degree of concern the respondents had for the development of the *On Taiwan* controversy and the Fourth Nuclear Power Plant dispute, respectively. Answers were recorded on a ten-point scale where "one" means "no concern at all" and "ten" means "a great deal of concern."

Its an Arousing, Fast Paced Kind of World: The effects of Age and Sensation Seeking on the Information Processing of Substance Abuse PSAs

Seungwhan Lee

Yongkuk Chung

Mija Shin

Doctoral students

Annie Lang
Professor
(812) 855-5824
anlang@indiana.edu

Institute for Communication Research
Department of Telecommunications
Indiana University
1229 East 7th Street
Bloomington, IN 47405-5501

This research supported by the National Institute on Drug Abuse research grant R01 DA12359-02.

April 1, 2002

This paper submitted for consideration to the Communication Theory and Methodology Division of the Association for Education in Journalism and Mass Communication.

Its an Arousing, Fast Paced Kind of World: The effects of Age and Sensation Seeking on the Information Processing of Substance Abuse PSAs

Abstract

This paper investigates how Sensation Seeking and production features alter how adolescents and college students process PSAs. Subjects viewed 30 public service announcements which varied in terms of arousing content and production pacing. Dependent variables included physiological responses, recognition, sensation seeking, and substance use. Results show that high sensation seekers prefer all messages, remember more, and exhibit lower arousal compared to low sensation seekers. Adolescents are more aroused and remember more information. All subjects exhibit cognitive overload at the same point in time.

Its an Arousing, Fast Paced Kind of World:
The effects of Age and Sensation Seeking on the
Information Processing of Substance Abuse PSAs

The goal of this study is to begin to investigate how the personality variable of sensation seeking impacts the online information processing of substance abuse public service announcements by college students and adolescents. A fair amount of research has investigated sensation seeking as a predictor of alcohol and drug abuse as well as other risky behaviors ((Arnett, 1996; Darkes, Greenbaum, & Goldman, 1998; Donohew et al., 2000; R. L. Donohew et al., 1999; Hines & Shaw, 1993; Jack & Ronan, 1998; Johnson & Cropsey, 2000; Kalichman, Heckman, & Kelly, 1996; Sheer & Cline, 1995; Simon, Stacy, Sussman, & Dent, 1994)). The majority of this research concludes that sensation seeking is an excellent predictor of alcohol and drug abuse. Some research has looked at whether the sensation seeking personality construct predicts media use ((Dsilva, 1999; McNamara & Ballard, 1999; Perse, 1996; Rowland, Fouts, & Heatherton, 1989)). It is frequently theorized that sensation seekers prefer media which is high in arousal. This research has shown some slight preference in high sensation seekers for more arousing media. Finally, based on these findings, a third line of research has tried to develop messages about drug abuse which contain numerous fast paced production features in order to attract the attention of high sensation seekers, who are more likely to engage in risky behaviors and become substance abusers ((Donohew, Lorch, & Palmgreen, 1991; R. L. Donohew et al., 1999; Lorch, Palmgreen et al., 1994a; Lorch, Palmgreen et al., 1994b; Lorch, Palmgreen, Donohew, Helm, & et al., 1994; Palmgreen, Donohew, Lorch, Rogus, & et al., 1991; Summers & Baer, 1991)).

This paper, begins with a brief review of the sensation seeking concept. Next, it reviews the literature relating the sensation seeking construct to substance abuse. This is followed by sections which examine the relationships between media use and sensation seeking and between sensation seeking, attention, and processing. Next, predictions are made about how high and low sensation seekers might differentially attend to, encode, and store drug abuse public service announcements. Finally, we report the results of an experiment investigating whether adolescents and college students attention, encoding, storage, and arousal while viewing public service announcements differ as a result of sensation seeking.

What is Sensation Seeking?

Sensation seeking is conceptualized as a personality variable with biosocial underpinnings. Extensive research has been done to understand the psychobiological model underlying sensation seeking(Zuckerman, 1993, 1994a, 1994b, 1996). Sensation seeking has been shown to be associated with exploratory behavior in novel situations, approach to novel stimuli, sociability and dominance, sexual and consummatory behavior, and substance abuse(Zuckerman, 1996; Zuckerman & Kuhlman, 2000). Recent psychobiological models of personality have emphasized relationships between basic motivational behavioral pathways (appetitive and aversive systems) and personality traits. Using this approach, personality traits are seen as the result of complex interactions between the basic mechanisms of neurotransmitter systems.

If sensation seeking has biological roots and it should have biochemical and physiological correlates and research supports this contention. A fair amount of research has been done looking at the psychophysiology of sensation seeking(Zuckerman, 1990; Zuckerman, Ball, & Black, 1990). Zuckerman's classic definition of sensation seeking is the need for "varied, novel, and complex sensations and experience and the willingness to take physical and social risks for the sake of such experience" (Zuckerman, 1979, p. 10). In a recent review of the psychophysiology of sensation seeking Zuckerman suggests that the "intensity of sensation should have been included in this definition" ((Zuckerman, 1990), p. 313). Zuckerman suggests that sensation seeking is related to approach and withdrawal behavioral systems. Sensation seeking can then be conceptualized in terms of individual differences in responsiveness to intense and novel stimuli. The sensation seeking scale might be thought of as having two endpoints, sensation seeking and sensation avoidance. Using this conceptualization of sensation seeking, it might be expected that high sensation seeking individuals would have different behavioral responses to

Sensation seeking and substance abuse

A number of research studies have linked high sensation seeking with substance use and abuse. These studies include animal studies, neuropharmacological studies, experimental behavioral studies, and large-scale survey research. In general, all of these approaches have shown that high sensation seekers are more likely to use and abuse alcohol and drugs.

An example of an animal study is one reported by Dellu et al. Researchers have developed two strains of rats called RHA (Roman High Avoidance) and RLA (Roman Low Avoidance). RHA rats exhibit active avoidance reactions, running away from aversive stimuli, compared to RLA rats which tend to freeze when exposed to aversive stimuli. The RHA rats demonstrate more exploratory behavior and are less fearful in novel situations compared to RLA rats. The model suggests that RHA rats are similar to high sensation seekers and RLA rats are similar to low sensation seekers. When RHA and RLA rats are given the opportunity to self administer drugs, there are marked differences in their behavior. RHA rats quickly discriminate how to self administer the drug and maintain a high level of self-administration over a five-day experiment. RLA rats, on the other hand are slower to discriminate how to self-administer the drug and cease self-administration by the fourth day. Dellu et al. (1996) suggests that the high reactivity rats' propensity for self-administration and their higher sensitivity to the reinforcing properties of food suggest that their novelty seeking behavior may be related to greater activity in the approach system and may provide a biological basis for addiction theory.

Other researchers have examined the relationship between sensation seeking and substance abuse using a neuropharmacological approach. Wiesbeck et al. (1996) examined relationship between alcoholism, and activity in the dopamine and serotonin systems. They suggest that the reinforcing properties of alcohol are mediated by the dopamine pathway. They argue that both alcoholism and sensation seeking input to the dopamine pathway. In this study they found that alcoholics with an alcoholic family history have higher sensation seeking scores than alcoholics with no family history of alcoholism and sensation seeking was highly correlated with dopamine activity(Wiesbeck et al., 1996).

Geir, Mucha, & Pauli (Geir, Mucha, & Pauli, 2000) examined the relationship between smoking and emotional responses to pictures of smoking. In this study, smokers and non-smokers viewed a set of pictures from the International Affective Picture Show (IAPS). Physiological responses were measured to pleasant, unpleasant, and neutral groups of slides. In addition subjects viewed pictures of smoking. Smokers responses to the smoking slides resemble their responses to positive pictures. Non-smokers responses to the smoking slides resembled their responses to negative pictures. A similar study, with similar results, alcoholics and non-alcoholics responses to pictures of alcohol (Mucha, Geier, Stuhlinger, & Mundle, 2000). These studies suggest that, at a physiological level, substance abusers response to their substance is strongly positive, and may be related to activation in the approach motivational system.

Scourfield, Stevens, & Merikangas (Scourfield, Stevens, & Merikangas, 1996) examined sensation seeking scores in patients in drug and alcohol abuse treatment and in anxiety disorder clinics. They found that substance abusers have higher sensation seeking scores than patients with anxiety disorders or control groups. They found that substance abusers with an anxiety disorder have lower sensation seeking scores than substance abusers without an anxiety disorder. The major predictors of lifetime sensation seeking in this study were sex, age, and a lifetime diagnosis of substance abuse.

Johnson & Cropsey compared sensation seeking scores for college students who play drinking games compared to those to do not only drinking games(Johnson & Cropsey, 2000). They found that high sensation seekers are more likely to play drinking games than low sensation seekers and that high sensation seekers consume more at a single playing occasion than low sensation seekers.

In addition to being related to substance abuse, sensation seeking is also correlated with other risky behaviors including risky sexual behaviors(Donohew et al., 2000; Zuckerman & Kuhlman, 2000), high-risk sports(Jack & Ronan, 1998), adolescent reckless behavior(Arnett, 1995), and reckless driving ((Arnett, 1990; Jonah, 1997; Yu & Williford, 1993)).

H1: Given the above research it is predicted that there will be correlation between sensation seeking and alcohol, cigarettes, and drug use.

Given the above research, it is clear that the relationship between sensation seeking and substance abuse is worth studying further. In particular, it makes sense to design prevention campaigns that will be effective with people who are high sensation seekers. This means ascertaining whether high sensation seekers use different information channels, prefer different types of content within a media channel, and process media messages differently from low sensation seekers. First, what do we know about sensation seeking and media use?

Sensation Seeking and Media Use

Several studies have investigated whether sensation seeking is related to choice of information channel. Dsilva (1999) examined whether sensation seeking influenced where 18-22 your olds obtained information about exciting alternatives to drugs and resisting peer pressure (two types of information related to prevention campaigns) (Dsilva, 1999). Participants rated a list of alternatives of where they would get information. High sensation seekers are less likely than low sensation seekers to contact any source of help included in this study. However, all of the sources of information in this study were interpersonal. Parents and friends were the most likely alternatives chosen, with low sensation seekers being more likely than high to seek out a drug counseling center, call an 800 hotline, contact a church group, or talk to parents.

Other studies have examined whether sensation seeking is related to amount of television viewed, and choice of content viewed. Potts, Dedmon, and Halford (1996) examined the relationship between sensation seeking in television viewing motives and home TV viewing preferences (Potts, Dedmon, & Halford, 1996). They found that high sensation seekers and low sensation seekers did not differ on amount of television viewing or in the importance of television in their lives. However they found that high sensation seekers, compared to low sensation seekers, watched more music videos, daytime talk shows, stand up comedy programs, documentaries, and animated cartoons. Low sensation seekers watched more newscasts and drama series. Another study by Perse examined differences in high and low sensation seekers television viewing habits and motivation. Again, she found no difference in the amount of television viewed between high and low sensation seekers. However she did find that high sensation seekers watched more music video formats and action adventure programs. In addition high sensation seekers were more likely to watch television for ritualistic reasons, while doing something else, change channels more often, change channels out of boredom, and change channels to seek arousing content (Perse, 1996).

Similarly, Krcmar & Greene (1999) examined the relationship between sensation seeking and viewing violent television. In a survey of junior high, high school, and college students they found positive correlations between sensation seeking and drug use, risky driving, delinquency, and alcohol use (Krcmar & Greene, 1999). Interestingly, however, they found negative relationships between sensation seeking and viewing violent television. Positive correlations were found between sensation seeking and viewing contact sports and real crime shows. In addition, this study found differences among the before sub scales of the sensation seeking measure. In particular they found that media use was more strongly correlated with the thrill and adventure seeking and the disinhibition subscales while the experience seeking and boredom susceptibility subscales were more strongly related to real risk-taking behavior. They suggested that those high in experience seeking and boredom susceptibility are not using media but rather seeking out more exciting things to do. The authors also suggested that the different subscales may be related to preferences for different types of media content. They suggest that the disinhibition scale may be more related to socially sanctioned behaviors rather than physically dangerous behaviors; that thrill and adventure seeking might be related to arousal triggered by physical activity; that experience seeking might be related to arousal triggered by novel stimuli; and that the boredom susceptibility subscale might be related to arousal elicited by a lack of repetition.

One of the primary motivators in all of the research relating sensation seeking to media use is a focus on the relationship between resting arousal or need for arousal and sensation seeking. For example Perse (Perse, 1996) says, high sensation seekers become easily bored and prefer stimulating experiences and stimulating environments whereas low sensation seekers prefer calmer and less arousing experiences and environments. Similarly McNamara & Ballard (1999) suggest that sensation seeking is related to resting arousal and that resting arousal may affect music or media preference(McNamara & Ballard, 1999). Donahew, Palmgreen, & Duncan (1980) suggest that need for sensation is related to differences in the desired level of stimulation from exposure to information. Their Activation Model of Information Exposure argues that individuals choose information sources in order to achieve or maintain an optimal state of activation. If messages are too arousing or are insufficiently arousing, individuals will attempt to find a different message with a more optimum arousal level.

Sensation seeking, high sensation value messages, and designing substance abuse PSAs

Using this approach, Donohew and his colleagues have undertaken a number of studies investigating the relationship between sensation seeking and preference for various types of media messages (Donohew, 1990; Donohew, Clayton, Skinner, & Colon, 1999; Donohew, Helm, Lawrence, & Shatzer, 1990; Donohew, Lorch et al., 1991; Donohew, Lorch, & Palmgreen, 1998; Donohew, Palmgreen, & Lorch, 1994; Donohew, Sypher, & Bukoski, 1991; Donohew et al., 2000; R. L. Donohew et al., 1999). Their research shows that high sensation seekers prefer messages which are high in message sensation value. High sensation value messages use novelty, quick cuts, emotional impact, intense music, and fast pace and are produced in such away that the audiovisual features and content elicit strong attention, affective, and arousal responses.

Lorch et al. (1994) investigated whether high and low sensation seekers paid different amounts of attention to high and low sensation value programming and to the PSAs embedded in them (Lorch, Palmgreen, Donohew, Helm, & et al., 1994). Results showed that high sensation seekers paid more attention to PSAs embedded in high sensation value programming, and low sensation seekers paid more attention to PSAs embedded in low sensation value programming. In addition, high sensation seekers pay more attention to messages high in sensation value than they do to messages low in sensation value. Interestingly, low sensation seekers did not differ in their attention to high and low sensation value programming.

H2: Based on these findings it is predicted that high sensation seekers will report feeling more positive than low sensation seekers during arousing and fast paced public service announcements.

Message Sensation Value, Emotional Response, and Message Processing

As mentioned above, Donahew, Lorch, Palmgreen and their colleagues have extensively studied how message sensation value may have different effects on high and low sensation seekers. In this research they have combined elements of content and structure of messages in their definition of a high sensation value message. However, other research suggests that the physiological responses to high sensation value structural features and high sensation value content features are not the same. If, as suggested above, high and low sensation seekers differ fundamentally in their processing of emotionally valent stimuli in addition to processing novel and intense stimuli differently, it may be necessary to determine separately the effects of different types of structural and content features on high and low sensation seekers.

Research using the limited capacity model of mediated message processing has attempted to determine the effects of individual content and structural features of media on media users' cognitive and emotional responses to messages(Lang, 1995, 2000; Lang, Bolls, Potter, & Kawahara, 1999; Lang, Dhillon, & Dong, 1995; Lang, Geiger, Strickwerda, & Sumner, 1993; Lang, Newhagen, & Reeves, 1996).A brief description of that model follows.

The limited capacity model of television viewing defines the viewer as an information processor, the television medium as a variably redundant ongoing stream of audio and video information, and the message content as the topic, genre, and information contained in a message. Television viewing is the allocation of a limited pool of processing resources to the cognitive processes required for viewers to make sense of a message. Processing a message includes (but is not limited to) the parallel cognitive subprocesses (or tasks) of encoding, storage, and retrieval.

Comprehension of a television message involves the continuous and simultaneous operation of these sub-processes. New information from the message is continuously attended to, encoded into short term or working memory, processed, and stored. Previously held information (required to understand the message) is concurrently retrieved, associated with the new information, and stored again. Information encoded earlier in the message is being stored as later information is being encoded.

Since it is not possible for the viewer to encode and store all the information in the message, the viewer continuously selects which information in the message to encode, process, and store. The amount of information that can be attended to, encoded, and stored has an upper bound created by the availability of the viewer's processing resources, which are limited. Viewed in this way, television viewing, although it "feels" simple, is in fact a complex and difficult cognitive task. How large a portion of a television message is successfully encoded, stored, and eventually retrieved is determined by the level of resources required by and allocated to the various subprocesses involved in viewing. The viewer, the medium, and the content all affect how resources are allocated to processing the message.

The viewer controls some aspects of the allocation of processing resources by making decisions about whether to watch, how carefully to watch, and how hard to try, based on how interesting the subject is, how relevant the information is, or simply whether the viewer wants to remember it (Gantz, 1978). This voluntary or controlled allocation of processing resources is a relatively long term process occurring over minutes or hours. Similarly, characteristics of the viewer (like familiarity with the topic, emotional response to a topic, etc.) partly determine the level of resources required to make sense of and store the message.

The medium itself controls the automatic allocation of processing resources through the elicitation of orienting responses (ORs) in viewers. These ORs are automatic, reflexive attentional responses to changes in the environment or to stimuli that people have learned signal important information. In television, ORs are elicited by structural features like cuts, edits, movement, flashes of light, and sound (Lang, 1990; Lang, Geiger, Strickwerda, & Sumner, 1993; Reeves, Thorson, Rothschild, MacDonald, Hirsch, & Goldstein, 1985; Thorson & Lang, 1992). This automatic allocation of resources is a relatively short-term response, occurring over seconds.

The content of the message can also invoke both automatic and controlled allocation of processing resources. Aspects of content, such as relevance and difficulty, can elicit controlled allocation of processing resources (Basil, 1994; Thorson & Lang, 1992). Other aspects of content, such as emotion, elicit automatic allocation of resources (Lang, Dhillon, & Dong, 1995; Lang, Newhagen, & Reeves, 1997; Newhagen & Reeves, 1992).

In summary, the limited capacity model makes the following general predictions: 1) The viewer allocates an overall level of processing resources to the complete viewing task based on goals, interests, etc.; 2) The viewer's goals influence the proportion of resources allocated to the various subprocesses (such as storage and retrieval); 3) Structural and content features of the message elicit orienting behavior and the automatic allocation of resources to encoding; 4) both content and structural attributes can elicit arousal which increases the allocation of resources to processing the message; 5) When there are insufficient resources available to carry out all the sub-processes, some aspect(s) of processing will be performed less well.

Pacing, Arousing Content, and Cognitive and Affective Responses

Of particular interest here is research within this approach that has examined how both emotional content and structural content affect cognitive and emotional processing. First, consider the question of using emotional content and fast paced structure to increase the message sensation value and therefore increase the appeal of the message for high sensation seekers. According to most of the research, sensation seekers should process arousing messages preferentially. In particular, they should pay more attention to both arousing messages and fast paced messages. This leads to hypothesis 3:

> H3: High sensation seekers compared to low sensation seekers will have slower heart rates during arousing and fast paced messages.

In addition to paying more attention to these messages, high and low sensation seekers might differ in the sense of arousal may experience as a result of viewing the messages. Generally speaking, it is assumed that high sensation seekers need more arousing messages in order to feel equivalent amounts of arousal. On the other hand, low sensation seekers aren't easily aroused and therefore prefer to avoid high sensation value messages. Therefore hypothesis 4:

> H4: High sensation seekers compared to low sensation seekers will have lower levels of arousal (both physiological and self-report) during arousing and fast paced messages.

Previous research suggests that arousing content and fast paced messages result in the allocation of resources to encoding which is indexed using recognition measures. Further, arousing content and pacing interact such that increased pacing increases recognition for a message up to the point of overload after which recognition declines. In previous studies, pacing has generally increased in recognition for calm messages, but resulted in a decrease in recognition for arousing messages, because the combination of arousing content and fast pace pushes the system into cognitive overload. However, research looking at cognitive and affective responses to risky substances (e.g. alcohol, cigarettes, drugs) messages compared to non risky substances has demonstrated that risky substances also increase the arousing content of a message. In one previous study, the presence of risky substances resulted in decreased recognition, indicative of cognitive overload, at the fast level for calm messages and at the medium level for arousing messages. Therefore in it is predicted that:

H5: There will be an interaction of production pacing and arousing content on the recognition data, such that, increased pacing decreases recognition for both calm and arousing messages, but decreases recognition more for arousing messages.

Taken further, if high sensation seekers experience less arousal than low sensation seekers in response to arousing and fast paced messages it is also predicted that:

H6: High sensation seekers compared to low sensation seekers should exhibit overload at a later point.

Most of the processing research reported above was done on college students. Little is known about how adolescents process television messages, therefore we often the following research question:

R1: Do adolescents and college students differ significantly from one another on any of the relationships tested in this study.

In order to test these hypotheses an experiment was carried out. Two groups of subjects, one group of adolescents ages 11-17 and one group of college students aged 18-27 viewed 30 substance abuse public service announcements which varied in terms of arousing content and production pacing. During viewing we measured their heart rate, skin conductance, and emotional self-report. Following viewing we measured their recognition for information contained in the ad, their own levels of substance use, and sensation seeking.

Methods

Design

This study used a mixed Arousing Content (2) X Production Pacing (3) X Repetition (5) X Order of Presentation (3) X Sensation Seeking (2) X Age (2) factorial design. Arousing Content, Production Pacing, and Repetition were within-subject factors and Sensation Seeking, Age, and Presentation Order were between-subject factors. Two levels of arousing content (calm and arousing) and three levels of pacing (slow, medium and fast) were fully crossed resulting in six categories (calm-slow, calm-medium, calm-fast, arousing-slow, arousing-medium, and arousing-fast). Five messages were chosen for each category, resulting in a total of thirty messages. The messages were selected from a large pool of PSAs, and presented in three different orders. The subjects were randomly assigned to one of the three orders. When analyzing the heart rate data, there is also a within-subject Time factor which has 11 time points: 10 time points which are constructed by averaging heart rate over 2.5 second periods within the 30 second message and the baseline time point made up of the last heart beat before message onset.

Independent variables

Stimuli materials

Pacing Three levels of pacing (slow, medium, and fast) were created for this study. Previous research in this area has operationalized pacing in a number of ways including number of scene changes per time unit and number of camera changes per time unit. Lang (2000, 1999a, 1999b) argues that the cognitive load demanded by increases in pacing is directly related to the resource requirements of the structural feature being manipulated. Hence, scene changes require more processing resources than camera changes and, as a result, it will take fewer scene changes than camera changes per time unit to overload processing. In this study, it was discovered that very few youth targeted substance abuse PSAs were slow paced. Thus, a decision was made to control both the number of scene changes and the number of camera changes in order to manipulate pacing.

Both the number of camera changes and the number of scene changes were counted for each PSA being considered for inclusion in this study. Slow messages had 0-3 scene changes per thirty seconds. Medium messages had 7-10 scene changes per thirty seconds. Fast messages had 11-34 scene changes per message. In addition, the number of camera changes in the message was counted and then, a pacing index was created by adding the number of scene changes plus 1/2 the number of camera changes (because camera changes require fewer cognitive resources). Messages were selected so that there was no overlap between production pacing levels. That is, the combination of scene changes and camera changes for slow messages is always smaller than for medium messages and so on. For the final stimulus tape, slow messages had an average pacing index of 5.7; medium messages had an average pacing index of 20.4; and fast messages had an average pacing index of 43.35. An ANOVA confirmed that the three levels of pacing differed significantly ($F(2, 27) = 71.98, p < .001$).

Arousing Content Arousing content had two levels (calm and arousing). In order to select messages which had calm or arousing content, a three-step process was followed. First, researchers rated each of the PSAs, being considered for inclusion in this study, as low, medium, or high on arousing content. Within these categories, 6-10 messages were selected at each level of pacing (slow, medium and fast). Next, a small group of graduate students viewed these messages and rated their self-reported arousal. Using these ratings, a set of approximately 45 messages was selected for pre-testing. These messages were then shown to undergraduate participants in telecommunications courses. Participants rated their emotional responses to the messages using the Self Assessment Manikin (SAM) emotional self-report instrument (P. J. Lang & Greenwald, 1985; P. J. Lang, Bradley & Cuthbert, 1999). Within each production pacing level, the five most arousing and the five least arousing messages were chosen for inclusion in the final stimulus tape. The average arousal ratings for the calm messages ranged from 2.84 to 4.37 on a nine point scale and the average arousal ratings for the arousing messages ranged from 5.35 to 7.48. As was expected, the calm messages were actually moderately arousing. However, they were significantly less arousing than the arousing messages.

Sensation Seeking Sensation Seeking personality was measured using the Zuckerman's standard Sensation Seeking Scale and the Arnett Inventory of Sensation Seeking (AISS). The former was applied to the college students and the latter was applied to adolescents. The

Zuckerman's Scale, Form V, is a 40-question forced-choice questionnaire consisting of 10 questions in each of four sub-scales: thrill and adventure seeking (TAS), experience seeking (ES), disinhibition (DIS), boredom susceptibility (BS). The responses of these subscales were summed to create the total Sensation Seeking score. The score on each of the four sub-scales as well as the total Sensation Seeking score were calculated for each participant. The participants were divided into low and high sensation groups, based on their Sensation Seeking scores.

The AISS was used to measure adolescents' sensation seeking personality. The Zuckerman's Scale contains some age-related items (e.g., items that involve physical strength, sexual choices, and or stamina) that may not be appropriate for or relevant to adolescents (see Arnett, 1994). The AISS consists of two sub-scales: novelty and intensity (10 items for each). The score on each sub-scale as well as the total score were calculated for each adolescent participant. Then, based on the score, the participants were divided into low and high sensation seeking groups.

Substance Use In addition, this study investigated the experience the subjects (college students) have with alcohol, cigarettes, and marijuana. For adolescents, the questions were rephrased to ask the likelihood of their future use (within next 12 months) of alcohol, cigarettes and marijuana. For example, a question to measure adolescents' potential alcohol use was "how likely is it that you will drink alcoholic beverages, even once or twice, in the next twelve months?"

Dependent variables

Arousal Viewer arousal was measured in 2 ways. First, self-reported arousal was measured using the Self-Assessment Mannequin (SAM) designed by P. J. Lang and his colleagues (P. J. Lang & Greenwald, 1985; P. J. Lang, Bradley & Cuthbert, 1999). SAM was devised as a picture-oriented scale to assess emotional response along the three dimensions of pleasure, arousal, and dominance. SAM has been used to measure viewers' emotional responses to televised message and has been shown as a reliable measure of evoked viewer emotion (A.Lang, Dhillon, & Dong, 1995; Morris, 1995; and Lang, Bolls, Potter, & Kawahara, 1999). For the current study only the valence and arousal dimensions were measured and only the arousal dimension is reported.

Second, physiological arousal was assessed by measuring participants' skin conductance responses. Skin conductance correlates highly with self-reported arousal (Greenwald, Cook, & P. Lang, 1989) and is a measure of activity in the sympathetic nervous system (Hopkins & Fletcher, 1994). Skin conductance was analyzed in two ways. First, the frequency of spontaneous skin conductance responses during each message was coded. Second, the amplitude of the largest spontaneous skin conductance response during each message was coded.

Attentional Effort Controlled attention was assessed using heart rate. Generally, voluntary allocation of attention to an external stimulus will lead to slower heart rates (Caccioppo & Tassinary, 1995). Research on television has reliably shown decreases in heart rate associated with viewing and that these heart rate decreases correlate with other measures of attention, including secondary task reaction times and self-reported attention (Lang et al, 1999; Lang, Dhillon, & Dong, 1995).

Encoding Recognition was used to assess encoding and was measured using forced choice four alternative multiple choice tests with four questions per message. For each message, a recognition question was developed for information contained in beginning, early middle, late middle, and late portion of the PSA.

Apparatus

The experiment was controlled by an Ampac 386 computer with a LabMaster AD/DA running VPM as the master control program. Time code on the stimulus tape was read by an Horita TRG-50 PC Time Code Reader/Generator that interfaced with the Slimey program (Newhagen, 1993). For some subjects data collection was begun manually by the experimenters.. Physiology data were collected using VPM computer program, version 11.0 (Cook, 2000). Skin conductance response was measured by placing two Beckman standard AG/AGCL electrodes on the subject's non-dominant hand after washing the skin with distilled water to control hydration. The signal was passed to a Coulbourn SC module which provides a constant measurement voltage of .5V. Heart rate was measured by placing a Beckman standard AG/AGCL electrode on each of the participant's forearms. A ground electrode was also placed on their non-dominant forearm. The stimuli tapes were played on a JVC videocassette player through a 25-inch color television set. Participants were seated in a comfortable chair placed approximately 5 ft. from the television set and were asked to move as little as possible after the electrodes were in place. They were separated from the experimenter and all other equipments by a wall.

Procedure

Each subject completed the experiment protocol individually. Each subject was greeted upon arrival and signed an informed consent form (an assent form for the adolescents). For adolescents, parental consent was obtained by mail before scheduling the experiment. Electrodes were placed on their forearms and hand, and they were told that they would watch thirty television PSA messages and that we would, then, test their memory in the messages. Following each message, participants rated how they felt during the message using the SAM scale. Between messages participants also completed self-relevance and perceived reality items for each message. After viewing all 30 messages, subjects performed two distractor tasks (reading an interactive web story and viewing 2 television news stories). Following the distractor tasks, the subjects took the recognition test, filled out a set of questionnaires, including sensation seeking, experience with alcohol, cigarettes and marijuana (or likelihood of future use), and demographics. Finally, the subjects were thanked and dismissed.

Participants

Fifty-nine undergraduates enrolled at a large Midwestern University participated in the experiment and were given extra credit toward a communication course. Participants range in age from 18 to 27 (M = 20.93, SD = 1.98). Eighty-six adolescents, who either attended a high school in the same area or were members of the Boys and Girls Club, participated in the study. Their age ranged from 12 to 18 (M = 14.88, SD = 1.76).

Results

Hypothesis 1

This hypothesis predicted that there would be correlation between sensation seeking and alcohol, cigarette and drug use. Correlation analyses were run on college students and adolescents data separately. As can be seen in Table 1, the correlation analysis on college students data shows that sensation seeking and substance use are highly associated with each another. In particular, the disinhibition subscale and the experience seeking subscale show relatively high correlations with substance use. Correlation analysis on adolescents data also shows that sensation seeking and potential use are considerably correlated, as seen in Table 2.

Table 1. College sensation seeking and substance use

Use	Disinhibition	Boredom Susceptibility	Experience Seeking	Thrill & Adventure Seeking	Sensation Seeking Total
Alcohol	.575**	.249	.349**	.080	.474**
Cigarette	.322*	.117	.241	.005	.255+
Marihuana	.548**	.146	.341*	.083	.420**
Total	.604**	.237	.345*	.053	.466**

+ p< .06, * p<.05, ** p<.01

Table 2. Adolescents sensation seeking and substance use

	Intensity	Novelty	Sensation Seeking Total
Alcohol	.185	.402**	.353**
Cigaret	.252*	.129	.240*
Marihuana	.342**	.282*	.392**

* p<.05, ** p<.01

Hypothesis 2

This hypothesis predicted that high sensation seekers would report feeling more positive than low sensation seekers during arousing and fast paced public service announcements compared to calm and slow paced messages. Neither the Sensation Seeking X Arousing Content nor the Sensation Seeking X Production Pacing interaction were significant. However, the main effect of Sensation Seeking on self-reported valence was significant (F(1,106) = 4.26, p<.05, epsilon squared = .03) with high sensation seekers experiencing more positive feeling (M = 4.82) than low sensation seekers (M = 4.54) regardless of pacing and arousing content.

A relevant research question was to see if adolescents and college students would be different in reporting their positive and negative valence. ANOVA shows no differences between the two groups.

Hypothesis 3

This hypothesis predicted that high sensation seekers compared to low sensation seekers would have slower heart rates during arousing and fast paced messages. The predictions were made for arousing content and production pacing separately. The first prediction is for the

Figure 1

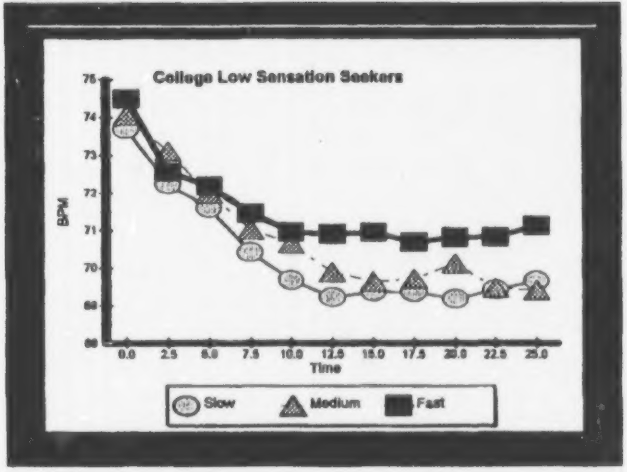


Figure 2

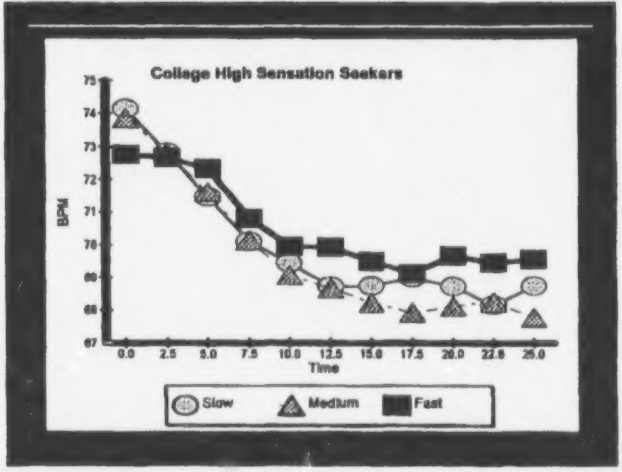


Figure 4

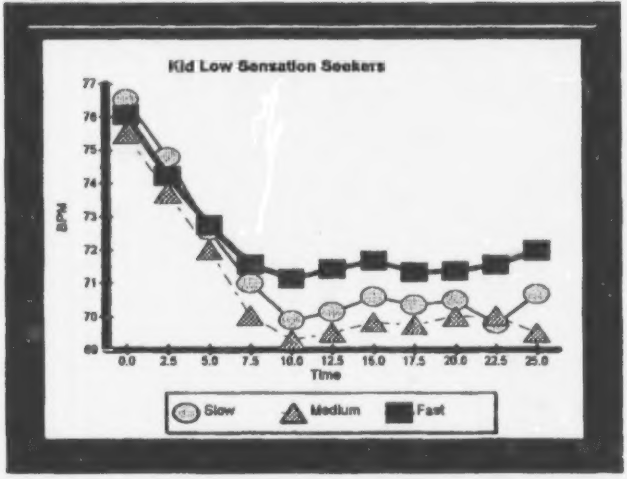
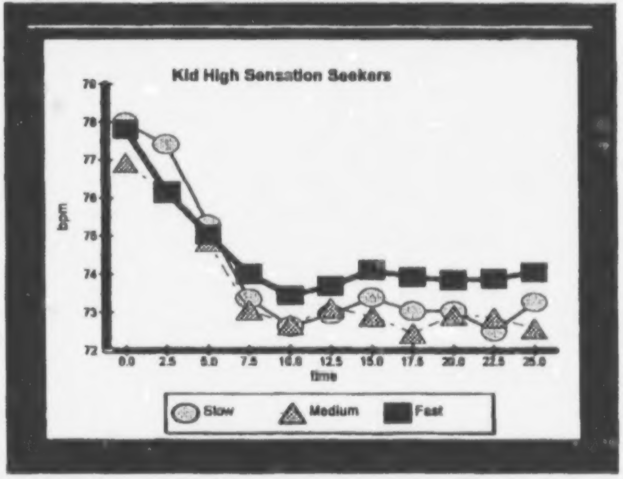


Figure 3



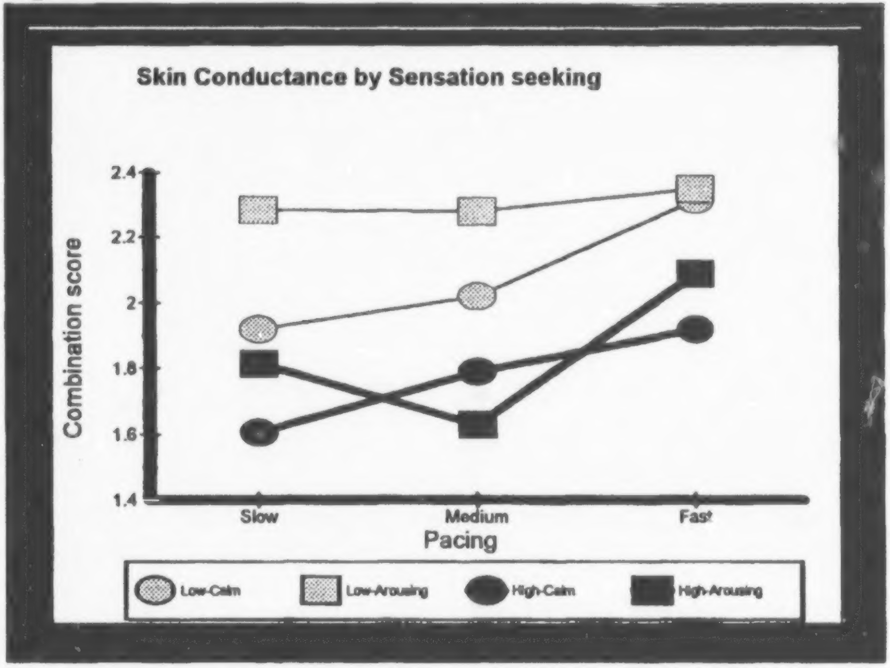
interaction of Sensation Seeking X Arousing Content X Time. This interaction was not significant (F < 1). The second prediction is for the interaction of Sensation Seeking X Production Pacing X Time and the predicted interaction was also not significant.

The research question asked if adolescents and college students would be different in how they pay attention to PSAs. There was a significant interaction among Age X Sensation Seeking X Production Pacing X Time (F(20,2500) = 1.72, p < .024, epsilon squared = .005). This interaction (shown in Figures 1- 4) showed that low sensation seeking college students demonstrated a different attention pattern in response to arousing content and pacing compared to high sensation seeking college students and all adolescents. High and Low sensation seeking adolescents and high sensation seeking college students have the fastest heart rate (indicative of the least attention) in response to fast paced, followed by slow paced, followed by medium paced

BEST COPY AVAILABLE

PSAs as seen in Figure 2 to 4. Low sensation seeking college students, on the other hand have the fastest heart rate (indicative of the least attention) in response to fast, followed by medium, followed by slow PSAs as seen in Figure 1.

Figure 5

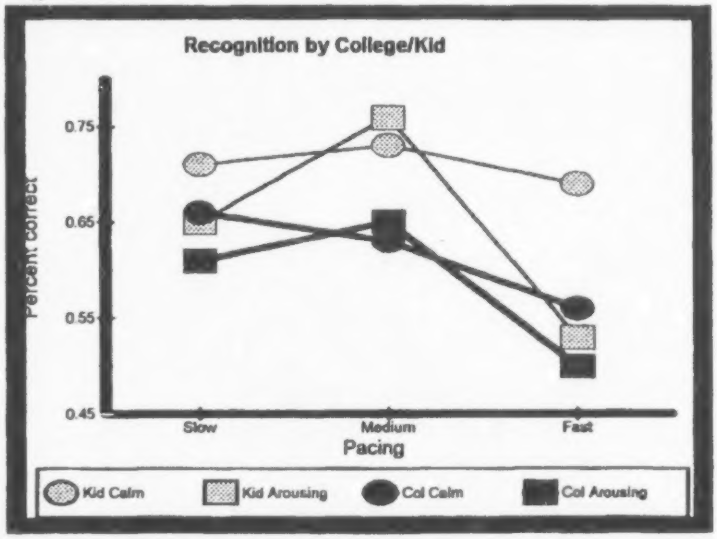


Hypothesis 4

This hypothesis predicted that high sensation seekers compared to low sensation seekers would have lower levels of arousal (both self-report and physiological) during arousing and fast paced messages. Self-reported data show that there was no significant difference in self-reported arousal in response to either production pacing or arousing content between high and low sensations seeking groups.

However, skin conductance data tell us a different story. ANOVA analysis on skin conductance data yielded a marginally significant Sensation Seeking X Pacing interaction (F(2,256) = 2.58, p < .08, epsilon squared = .011) on skin combination scores yielded by adding skin conductance frequency and amplitude. This interaction is shown in Figure 5. High sensation seekers, as one would predict, show lower skin conductance responses in general compared to low ~~high~~ sensation seekers.

Figure 6



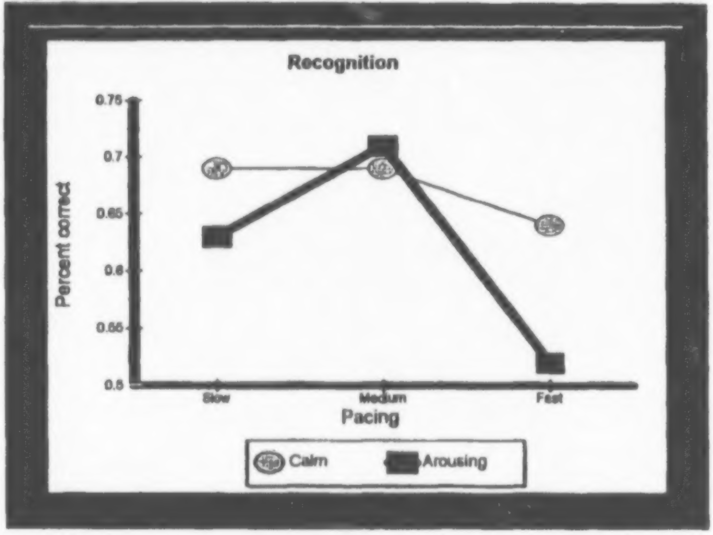
The research question asked if college students and adolescents would show different self-report and physiological arousal. Thus, the prediction is for the interaction among Age X Sensation Seeking X Arousing Content X Production Pacing interaction. The predicted interaction was significant (F(2,256) = 3.09, p <.047, epsilon squared = .015) which is shown in Figure 6 and 7.

Overall patterns supported the predicted hypothesis with high

BEST COPY AVAILABLE

sensation seekers having lower skin conductance responses than low sensation seekers except when college high sensation seekers watched arousing PSAs.

Figure 8



Hypothesis 5

This hypothesis predicted an interaction of Production Pacing and Arousing Content on the recognition data, such that, increased pacing would decrease recognition for both calm and arousing messages, but decrease recognition sooner for arousing messages. This interaction was significant (F(2,260)=34.48, p<.000, epsilon squared=.203) and is shown in Figure 8. As seen in Figure 8 , for arousing messages, system overload occurred at the medium paced level and recognition memory rapidly dropped after the overload. For calm messages, overload also occurs at the medium paced level. After that point recognition decreases, but not as quickly as it did for arousing messages.

The research question asked if adolescents and college students would be different on recognition. Overall, adolescents' recognition was better (68%) than college students' (60%).

Figure 9

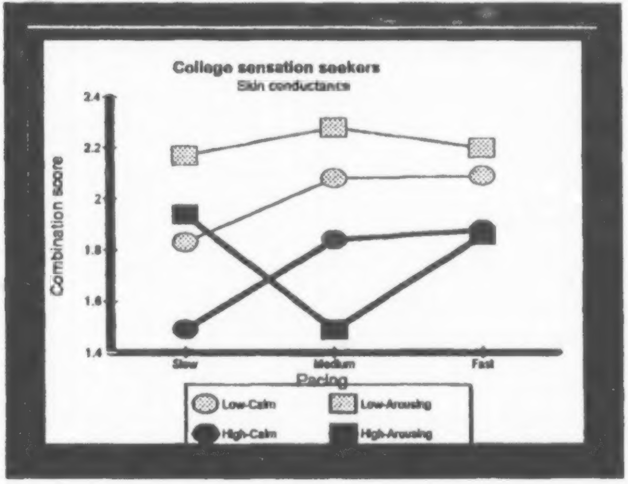
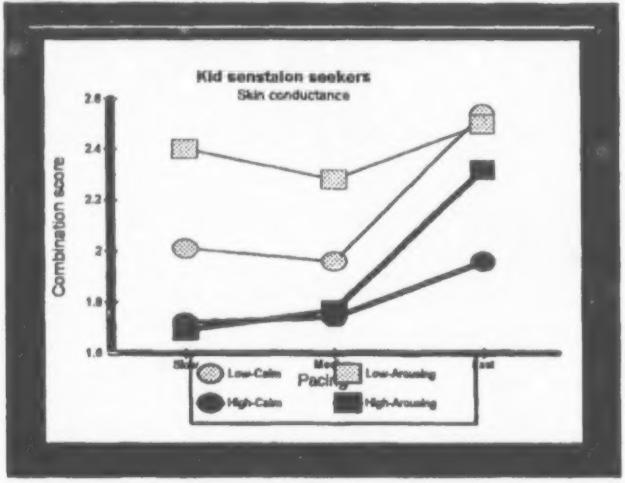


Figure 8



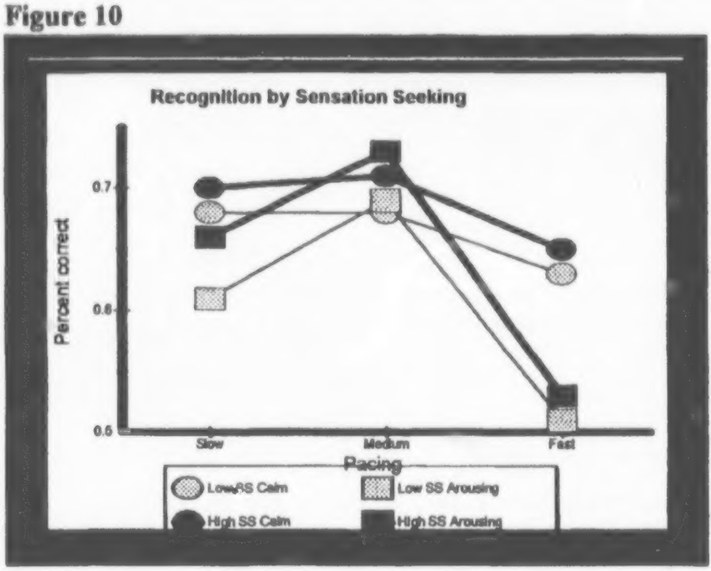
This difference was significant (F(1,130)=19.55, p<.000, epsilon squared=.122). Also there was a significant Age X Production Pacing X Arousing Content interaction effect on recognition (F(2,260)=6.14, p <.002, epsilon squared=.03) and is shown in Figure 9. For calm messages,

BEST COPY AVAILABLE

adolescents recognition was a little better at the medium pace level and recognition dropped a little further, whereas college students recognition memory dropped consistently through a slow pace level to a fast pace level. For arousing messages, both adolescents and college students' recognition memory were better at medium paced level. However, both adolescents and college students' recognition memory rapidly dropped after medium paced level, meaning that system overload occurred for both groups similarly.

Hypothesis 6

Figure 10



This hypothesis predicted that, high sensation seekers compared to low sensation seekers would exhibit overload at a later point. The main effect of sensation seeking on recognition approached significance (F(1, 13)=2.87, p<.093). High sensation seekers recognized 66% accurately whereas low sensation seekers recognized 63% correctly. Though Sensation Seeking X Production Pacing X Arousing Content interaction was not significant (F(2,260)=.44), Figure illustrates the main effect difference between high and low sensation seekers. In general, high sensation seekers had consistently slightly higher recognition scores for both calm and arousing messages than low sensation seekers. However, as seen in Figure 10, there was no difference in system overload pattern between low and high sensation seekers.

The research question asked whether the effect of sensation seeking on adolescents was different than it was for college students. Thus, what we look for is the Age X Sensation Seeking X Arousing Content X Production Pacing interaction. This interaction was not significant (F(2, 260)=1.42, p <.243).

Discussion

Generally speaking, the results of this study demonstrate that both sensation seeking and age have a significant impact on how people process substance abuse public service announcements. As has been seen in several previous studies, sensation seeking is a strong predictor of substance use or likely substance use for both college students and adolescents. The expected preference of high sensation seekers for arousing and fast paced messages was not seen, there were no differences in the effects of pacing or arousing content on high and low sensation seekers. Instead, sensation seekers generally reported feeling more positive than low sensation seekers in response to all messages.

The major hypotheses coming out of the work of Palmgren, Lorch, and Donohew were related to sensation seeking's effects on the elicitation of arousal. While there were no effects of

BEST COPY AVAILABLE

self-reported arousal as a result of fast paced or arousing content, there were effects on our physiological measure of arousal. As expected, low sensation seekers had higher skin conductance responses compared to high sensation seekers at all times, and the effect of pacing was greater on low sensation seekers than it was on high sensation seekers.

In addition to the effect of sensation seeking on arousal, there was also an effect of age on arousal. Adolescents showed greater skin conductance in response to both arousing content and pacing compared to college students. In addition, the effect of pacing was greater on the adolescent subjects compared to be college age subjects.

Despite this difference in arousal, there was very little difference seen in how high and low sensation seekers pay attention to the messages. As in previous studies, the subjects paid more attention to arousing messages than they did to calm messages. There was, however a significant difference between low sensation seeking college students and all the rest of the subjects. The low sensation seeking college students paid the most attention to slow paced public service announcements, followed by medium paced, and followed by fast paced. All other groups paid the most attention to medium paced messages, followed by slow paced messages, followed by fast paced messages. Thus, in this study, the fast paced messages always received the least attention.

Finally, as was expected, the combination of arousing content and fast paced overloaded the cognitive system and resulted in decreases in recognition memory. This occurred for both kids and college students and for both high sensation seekers and low sensation seekers. Neither sensation seeking nor age affected this interaction. However, main effects of both age and sensation seeking were seen on the recognition data. Adolescents recognized, in general, more information from the messages then college students. Similarly, high sensation seekers recognized ever so slightly more information from the messages compared to low sensation seekers.

What does this mean for people interested in producing substance abuse PSAs? First, it depends what age group you are targeting. Adolescents appear to encode more information from the PSAs compared to college students. This may be because they are experiencing more arousal in response to both pacing and arousing content compared to college students. Theoretically speaking, arousal results in increased resources being allocated to both encoding and storage. Thus, if greater arousal is experienced, more information should be encoded. Certainly, that was the case here.

On the other hand, as expected, sensation seekers differed in the amount of arousal elicited by fast pace and arousing content. As expected, it took more arousing content and more pacing to elicit equal sized arousal responses in high sensation seekers compared to low sensation seekers. On the other hand, despite the lower levels of arousal demonstrated by the high sensation seekers, they did encode slightly more information from the message than the low sensation seekers. Does this mean that high sensation seekers have a generally lower level of arousal compared to low sensation seekers and that the increase in skin conductance in response to arousing content and fast pace was similar to that of low sensation seekers, or does it mean that high sensation seekers and low sensation seekers start out at the same resting arousal point and that low sensation seekers have a greater increase in arousal in response to form and content? The similarity in recognition results suggests the former, but further research should investigate the resting arousal levels.

In addition, it was interesting to note that there was no interaction effect with sensation seeking of arousing content and pacing on self-reported positive valence in response to the messages. Instead, the high sensation seekers reported feeling more positive than the low sensation seekers no matter what the message was. This may mean that high sensation seekers like watching any kind of message more than low sensation seekers.

Finally, it was interesting to see that there was no effect on the recognition pacing X arousing content interaction for either age or sensation seeking. This means that neither of these variables impacted how the production features of arousing content and fast pace pushed the cognitive system into overload. High and low sensation seekers reached overload at the same point, and college students and adolescents similarly were overloaded by messages at the same point.

This study begins to tell us something about how sensation seeking and age impact the cognitive processing of substance abuse PSAs. Future research should focus on the differences in arousal seen in high and low sensation seekers in response to production and content features of messages. The impact of these arousal differences on storage and retrieval, as well as encoding, should be investigated.

References

Arnett, J. (1990). Drunk driving, sensation seeking, and egocentrism among adolescents. Personality and Individual Differences, 11(6), 541-546.

Arnett, J. (1995). The young and the reckless: Adolescent reckless behavior. Current Directions in Psychological Science, 4(3), 67-71.

Arnett, J. J. (1996). Sensation seeking, aggressiveness, and adolescent reckless behavior. Personality and Individual Differences, 20(6), 693-702.

Darkes, J., Greenbaum, P. E., & Goldman, M. S. (1998). Sensation seeking-disinhibition and alcohol use: Exploring issues of criterion contamination. Psychological Assessment, 10(1), 71-76.

Donohew, L. (1990). Public health campaigns: Individual message strategies and a model. In E. B. D. Ray, Lewis (Ed.), Communication and health: Systems and applications. (pp. pp. 136 - 152). Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.

Donohew, L., Clayton, R. R., Skinner, W. F., & Colon, S. (1999). Peer networks and sensation seeking: Some implications for primary socialization theory. Substance Use and Misuse, 34(7), 1013-1023.

Donohew, L., Helm, D. M., Lawrence, P., & Shatzer, M. J. (1990). Sensation seeking, marijuana use, and responses to prevention messages: Implications for public health campaigns. In R. R. Watson (Ed.), Drug and alcohol abuse prevention. Drug and alcohol abuse reviews. (pp. pp. 73 - 93). Clifton, NJ, US: Humana Press, Inc.

Donohew, L., Lorch, E. P., & Palmgreen, P. (1991). Sensation seeking and targeting of televised anti-drug PSAs. In L. S. Donohew, Howard E.; et al. (Ed.), Persuasive communication and drug abuse prevention. Communication. (pp. pp. 209 - 226). Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.

Donohew, L., Lorch, E. P., & Palmgreen, P. (1998). Applications of a theoretic model of information exposure to health interventions. Human Communication Research, 24(3), 454-468.

Donohew, L., Palmgreen, P., & Lorch, E. P. (1994). Attention, need for sensation, and health communication campaigns. American Behavioral Scientist, 38(2), 310-322.

Donohew, L., Sypher, H. E., & Bukoski, W. J. (Eds.). (1991). Persuasive communication and drug abuse prevention. Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.

Donohew, L., Zimmerman, R., Cupp, P. S., Novak, S., Colon, S., & Abell, R. (2000). Sensation seeking, impulsive decision-making, and risky sex: Implications for risk-taking and design of interventions. Personality and Individual Differences, 28(6), 1079-1091.

Donohew, R. L., Hoyle, R. H., Clayton, R. R., Skinner, W. F., Colon, S. E., & Rice, R. E. (1999). Sensation seeking and drug use by adolescents and their friends: Models for marijuana and alcohol. Journal of Studies on Alcohol, 60(5), 622-631.

Dsilva, M. U. (1999). Individual differences and choice of information source: Sensation seeking in drug abuse prevention. Communication Reports, 12(1), 51-57.

Geir, A., Mucha, R. F., & Pauli, P. (2000). appetitive nature of drug cues confirmed with physiological measures in a model using pictures of smoking. Psychopharmacology, home.

Hines, A. M., & Shaw, G. A. (1993). Intrusive thoughts, sensation seeking, and drug use in college students. Bulletin of the Psychonomic Society, 31(6), 541-544.

Jack, S. J., & Ronan, K. R. (1998). Sensation seeking among high- and low-risk sports participants. Personality and Individual Differences, 25(6), 1063-1083.

Johnson, T. J., & Cropsey, K. L. (2000). Sensation seeking and drinking game participation in heavy-drinking college students. Addictive Behaviors, 25(1), 109-116.

Jonah, B. A. (1997). Sensation seeking and risky driving: A review and synthesis of the literature. Accident Analysis and Prevention, 29(5), 651-665.

Kalichman, S. C., Heckman, T., & Kelly, J. A. (1996). Sensation seeking as an explanation for the association between substance use and HIV-related risky sexual behavior. Archives of Sexual Behavior, 25(2), 141-154.

Krcmar, M., & Greene, K. (1999). Predicting exposure to and uses of television violence. Journal of Communication, 49(3), 24-45.

Lang, A. (1995). Defining audio/video redundancy from a limited-capacity information processing perspective. Communication Research, 22(1), 86-115.

Lang, A. (2000). The limited capacity model of mediated message processing. Journal of Communication, 50(1), 46-70.

Lang, A., Bolls, P., Potter, R. F., & Kawahara, K. (1999). The effects of production pacing and arousing content on the information processing of television messages. Journal of Broadcasting and Electronic Media, 43(4), 451-475.

Lang, A., Dhillon, K., & Dong, Q. (1995). The effects of emotional arousal and valence on television viewers' cognitive capacity and memory. Journal of Broadcasting and Electronic Media, 39(3), 313-327.

Lang, A., Geiger, S., Strickwerda, M., & Sumner, J. (1993). The effects of related and unrelated cuts on television viewers' attention, processing capacity, and memory. Communication Research, 20(1), 4-29.

Lang, A., Newhagen, J., & Reeves, B. (1996). Negative video as structure: Emotion, attention, capacity, and memory. Journal of Broadcasting and Electronic Media, 40(4), 460-477.

Lorch, E. P., Palmgreen, P., Donohew, L., Helm, D., Baer, S., & Dsilva, M. U. (1994a). Program context, sensation seeking, and attention to televised anti-drug public service announcements. Human Communication Research, 20(3), 390-412.

Lorch, E. P., Palmgreen, P., Donohew, L., Helm, D., Baer, S. A., & Dsilva, M. U. (1994b). Program context, sensation seeking, and attention to televised anti-drug public service announcements. Human Communication Research, 20(3), 390-412.

Lorch, E. P., Palmgreen, P., Donohew, L., Helm, D., & et al. (1994). Program context, sensation seeking, and attention to televised anti-drug public service announcements. Human Communication Research, 20(3), 390-412.

McNamara, L., & Ballard, M. E. (1999). Resting arousal, sensation seeking, and music preference. Genetic, Social, and General Psychology Monographs, 125(3), 229-250.

Mucha, R. F., Geier, A., Stuhlinger, M., & Mundle, G. (2000). Appetitive effects of drug cues modelled by pictures of the intake ritual: generality of cue-modulated startle examined with inpatient alcoholics. Psychopharmacology, on line.

Palmgreen, P., Donohew, L., Lorch, E. P., Rogus, M., & et al. (1991). Sensation seeking, message sensation value, and drug use as mediators of PSA effectiveness. Health Communication, 3(4), 217-227.

Perse, E. M. (1996). Sensation seeking and the use of television for arousal. Communication Reports, 9(1), 37-48.

Potts, R., Dedmon, A., & Halford, J. (1996). Sensation seeking, television viewing motives, and home television viewing patterns. Personality and Individual Differences, 21(6), 1081-1084.

Rowland, G., Fouts, G. T., & Heatherton, T. (1989). Television viewing and sensation seeking: Uses, preferences and attitudes. Personality and Individual Differences, 10(9), 1003-1006.

Scourfield, J., Stevens, D. E., & Merikangas, K. R. (1996). Substance abuse, comorbidity, and sensation seeking: Gender differences. Comprehensive Psychiatry, 37(6), 384-392.

Sheer, V. C., & Cline, R. J. W. (1995). Individual differences in sensation seeking and sexual behavior: Implications for communication intervention for HIV/AIDS prevention among college students. Health Communication, 7(3), 205-223.

Simon, T. R., Stacy, A. W., Sussman, S., & Dent, C. W. (1994). Sensation seeking and drug use among high risk Latino and Anglo adolescents. Personality and Individual Differences, 17(5), 665-672.

Summers, P. B., & Baer, S. A. (1991). Sensation Seeking and Television Attention Styles: Looking for Godot?

Wiesbeck, G. A., Wodarz, N., Mauerer, C., Thome, J., Jakob, F., & Boening, J. (1996). Sensation seeking, alcoholism and dopamine activity. European Psychiatry, 11(2), 87-92.

Yu, J., & Williford, W. R. (1993). Alcohol and risk/sensation seeking: Specifying a causal model on high-risk driving. Journal of Addictive Diseases, 12(1), 79-96.

Zuckerman, M. (1990). The psychophysiology of sensation seeking. Journal of Personality, 58(1), 315-345.

Zuckerman, M. (1993). P-impulsive sensation seeking and its behavioral, psychophysiological biochemical correlates. Neuropsychobiology, 28(1-2), 30-36.

Zuckerman, M. (1994a). Behavioral expressions and biosocial bases of sensation seeking. New York, NY, US: Cambridge University Press.

Zuckerman, M. (1994b). Impulsive unsocialized sensation seeking: The biological foundations of a basic dimension of personality. In J. E. W. Bates, Theodore D. (Ed.), Temperament: Individual differences at the interface of biology and behavior. APA science volumes. (pp. 219 - 255). Washington, DC, US: American Psychological Association.

Zuckerman, M. (1996). The psychobiological model for impulsive unsocialized sensation seeking: A comparative approach. Neuropsychobiology, 34(3), 125-129.

Zuckerman, M., Ball, S. A., & Black, J. (1990). Influences of sensation seeking, gender, risk appraisal, and situational motivation on smoking. Addictive Behaviors, 15(3), 209-220.

Zuckerman, M., & Kuhlman, D. M. (2000). Personality and risk-taking: Common biosocial factors. Journal of Personality, 68(6), 999-1029.

Processing Anti-Drug Public Service Announcements: The Role of Perceived Self-Relevance

T. Makana Chock
Visiting Lecturer
tchock@indiana.edu

Mija Shin
Doctoral Candidate

Yongkuk Chung
Doctoral Student

Suengwhan Lee
Doctoral Student

Annie Lang
Professor

Department of Telecommunication
Institute for Communication Research
Indiana University
1229 E. 7th St.
Bloomington, IN 47405-5501
(812) 856-4850

April 1, 2002

This research is supported by the National Institute for Drug Abuse
R101-DA12359-01A
Paper submitted to the Communication Theory & Methods Division
AEJMC

Abstract

This study applied the Limited Capacity Model of Media Processing to the investigation of the role of reported self-relevance of Public Service Announcements (PSAs) in the processing of the information contained in those messages. The impact of the arousing content and production pacing of anti-drug and tobacco PSAs on adolescent and college age viewers' perceived self-relevance was examined as was the impact of self-relevance upon the attention, perceived valence, and subsequent memory for that message. In addition, the relationship between viewers' perceived similarity to characters in the message and their own experiences and perceived self-relevancy assessments was assessed. Results of this study suggest that increased self-relevance increases cognitive variables (attention and recognition) for both college students and adolescents. For more emotional or evaluative measures (self-reported arousal, physiological arousal, and valence ratings) the effect of perceived self-relevance is dependent upon ages. There were strong and persistent interactions with the age of viewers for these variables. Implications for PSA design are discussed.

Introduction

One of the most commonly used methods of conveying information about health, environmental risks, and social issues is that of Public Service Announcements (PSAs). A number of public health communication researchers have focused their attention on determining ways in which to design and deliver PSA messages to target populations and on how to affect risk-related beliefs, attitudes, and behaviors. Of particular concern are youth audiences at risk of engaging in drug or tobacco use. One important aspect of this research has been to determine ways in which to increase the perceived self-relevance of PSAs among targeted viewers. Little attention, however, has been directed at examining the ways in which perceived self-relevance may not only be affected by the structure and content of PSAs, but may influence the emotional and cognitive processing and storage of that message content.

This study will apply the Limited Capacity Model of media processing to investigate the role of reported self-relevance of Public Service Announcements (PSAs) in the processing of the information contained in those messages. We will examine the impact of the arousing content and production pacing of anti-drug and tobacco PSAs on adolescent and college age viewers' perceived self-relevance. The impact of self-relevance upon the attention given to a PSA and subsequent memory of that message will be assessed. This study will also examine the relationship between individual's perceptions of the self-relevance of a PSA and the perceptions of the valence and arousing nature of that message. In addition, the relationship between viewers' perceived similarity to characters in the message and their own experiences and perceived self-relevancy assessments will be examined.

In this particular study, the selected anti-drug and tobacco PSA messages were specifically designed to target adolescent audiences. Adolescents are viewed as being particularly at risk of initiating drug or tobacco use (Cappella, Fishbein, Hornik, Ahern, & Sayeed, 2001). College-age young adults, however, are also likely to be exposed to influences encouraging drug and tobacco use. This study will attempt to determine whether the same effects and processes are found for college age subjects as for adolescents. The results of this study should add to our knowledge about what characteristics of PSA content and structure influence perceptions of self-relevance and the ways in which self-relevance affects the attention given to, and memory for anti-drug messages.

Perceived Self-Relevancy

The concept of perceived self-relevance has been the focus of a number of different approaches to the study of the impact of health risk media messages (e.g. Duck, Terry, & Hogg, 1995; Snyder & Rouse, 1995). Numerous studies of the impact of public health communication have found that although media messages can convey information about various risks to viewers and influence perceptions of risk for other people in society, viewers are unlikely to perceive that information as relevant to their own lives and behaviors (see Atkin, 2001, Tyler & Cook, 1984). For example, a number of studies investigating the impersonal-impact hypothesis (Tyler & Cook, 1984) have found that media messages about crime risks (Doob & Macdonald, 1979), drunk driving (Tyler & Cook, 1984), and health care attitudes (Culbertson & Stempel, 1985) affected perceptions of societal level risks, but had little impact on perceptions of personal risk.

Under certain circumstances, however, media messages may be judged by audiences as applying to their own lives. The differential impact hypothesis, a revised version of the impersonal impact hypothesis, specifies that when the risk hazard is high and when the risky situation is deemed to be personally relevant, then media messages may influence individual perceptions of risk messages (Basil & Brown, 1997; Snyder & Rouse, 1995; Tyler & Cook, 1984). If messages are perceived as being personally relevant, then the possibility of desirable behavioral change is greatly increased (Snyder & Rouse, 1995).

To a certain extent, these approaches have tended to view perceived self-relevance as an important outcome measure in the study of the effectiveness of health campaign messages. If audiences consider these messages relevant to their own lives, then the messages have been effective.

In attempts to determine which factors enhance the self-relevance of PSAs, researchers have focused attention on different aspects of message content, such as the vividness of the messages (Flora & Maibach, 1990), identification with characters in the PSAs (Basil & Brown, 1997), and the use of emotional appeals (Dillard & Peck, 2000). What has received less attention is the role of self-relevance in the mental processing of PSAs. In addition, a number of these studies have examined the effects of print messages (e.g. Tyler & Cook, 1984) or of combinations of different types of media sources (e.g. Snyder & Rouse, 1995). Given the limited length and audio-visual content of televised PSAs, it is important to determine if there are certain aspects of the structure and content of television PSA messages that may impact perceived relevance. This study will apply the limited capacity model of media processing to examining these issues,

Limited Capacity Model

The limited capacity approach to television viewing proposes that viewer's information processing resources are limited (Lang, 1995, Lang & Basil, 1998, Lang Bolls, Potter, & Kawahara, 1999; Lang, Newhagen, & Reeves, 1996). While viewing television messages, audiences must attend to and encode the information contained in the message, retrieve already stored information from long term memory in order to make sense of the incoming message, and store the new information in long term memory. These three sub-processes of information processing--encoding, retrieval, and storage--occur continuously and simultaneously while viewers watch television (Lang, Zhou, Schwartz, Bolls, & Potter, 2000). Cognitive resources are distributed across these three processes. The task of viewing television is performed most effectively when all three sub-processes have sufficient resources available. The overall task of viewing television is performed less efficiently when insufficient resources are available to perform any aspect of the process.

It is not possible for viewers to encode and store all of the information in a television message. Consequently, the viewer continuously selects information from that message to encode, process, and store in memory. As the total amount of processing resources is limited, the amount of information that can be successfully processed is limited by the availability of those resources. The medium, the content, and the viewer all affect how resources are allocated in processing messages.

The distribution of resources is determined by both automatic and controlled processes. The medium and structure of the message control the automatic allocation of processing resources through the elicitation of orienting responses (ORs) in viewers. Orienting responses are automatic, reflexive, attentional responses to changes in the environment or to stimuli that people have learned signal important information (Lang, et al., 1999). In television, structural features such as cuts, edits, movement, and the overall pacing of a message elicit orienting responses.

The content of a television message can elicit both automatic and controlled processing resources. Automatic allocation of resources may be elicited by certain aspects of the content such as the emotional and arousing nature of the message (Lang, Dhillon, & Dong, 1995; Lang, et al, 1996; Newhagen & Reeves, 1997).

Viewers control the allocation of processing resources by determining what they will watch and the amount of care and effort they will exert in watching a television message. The voluntary or controlled processing of resources is a comparatively long term process which can occur over minutes or hours. Certain characteristics of the viewer, such as their emotional response to a message and their familiarity with that topic partly determine the level of resources required to make sense of and store the message (Lang, Bolls, Potter, & Kawahara, 1999). The impact of self-relevance on the processing of information conveyed by PSAs, however, is not thoroughly understood. Information that is perceived as being self-relevant is also likely to be information that the viewer has some familiarity with. Consequently, fewer cognitive resources would be required to process and store that message. On the other hand, given the nature of these types of messages, the perceived valence of the message, the potential arousal produced by the message, the ability of audiences to learn from that message and the distribution of cognitive resources among these tasks may affect and be affected by the self-relevance of the message. This study will examine the extent to which the perceived self-relevance of health risk messages affects the allocation of resources in the processing and storage of message information. Potential differences in perceptions of self-relevance and related processing of PSA messages between adolescents and college age students will be assessed for each of the following hypotheses.

Message Structure & Content: Arousing Content & Pacing

In this study, the amount of arousing content and the speed of pacing in anti-drug PSAs were manipulated in an attempt to predict the effects of both upon perceptions of self-relevance. Arousing message content has been found to elicit arousal in viewers which in turn should lead to the automatic allocation of resources to both encoding and storage (Lang, Bolls, Potter, & Kawahara, 1999). This should increase the amount of resources available to process incoming information. What is unclear is whether this increased allocation of resources would influence perceptions of self-relevancy.

Researchers have found that messages with more emotionally involving, vivid content are more likely to increase audiences' perceptions of the effectiveness of those messages and to enhance judgments of the relevancy of those messages to their own lives (Snyder & Rouse, 1995). Less arousing, or pallid, messages may be less likely to engage attention or interest and to "distance" a risk message from a viewer. This would suggest the following hypothesis:

H1a: Arousing content as compared to calm content should elicit more perceived self relevance among viewers.

It is possible, however, that given the nature of PSA messages (e.g. warnings about the negative effects of drug and tobacco use) viewers may be motivated to regard these messages as not applicable to their own lives. People tend to attempt to maximize pleasantness and avoid negatively arousing messages (Fiske & Taylor, 1984). If risk messages induce fear or discomfort in viewers, it is possible that subjects will engage in a form of "ego-defensiveness" (Weinstein, 1984, 1987) and seek to avoid fear-arousing content. It is therefore possible that we may find that:

H1b: Arousing content compared to calm content should elicit less perceived self relevance among viewers.

The pacing of a message has also been found to affect the ways in which people process and encode messages. Faster pacing has been found to increase both physiological arousal and perceived arousal (Lang et al., 1999; Lang, Zhou, Schwartz, Bolls, & Potter, 2000). As the pacing of a message increases, the number of orienting responses elicited by the message, and the amount of information available to be encoded should increase. Viewers would therefore automatically allocate more resources to fast paced messages. However, because the processing system is limited, the increase in processing resources required by faster pacing and by arousing content would at some point be greater than the cognitive resources available to the viewer. If the cognitive system is overloaded, it is possible that the cognitive resources needed to process the message, compare it to existing knowledge or experiences in that area, and to store the message in memory will be unavailable. Under these conditions, it may be difficult for viewers to make assessments of the self-relevance of PSA messages. This study will therefore test the following questions:

RQ1: What is the impact of message pacing on perceived self-relevance?
RQ1a: Is there an interaction between arousing/calm content and pacing on viewer's perceived self-relevance?

Perceived Valence of the Message

The perceived self-relevancy of a PSA may influence or be influenced by the perceived valence of that message. The majority of PSAs attempt to evoke an emotional response from audiences (see Dillard, Price, & Peck, 2000). However, the effects of the perceived positive or negative valence of the message on audiences' perceptions of the message are somewhat complex. Although messages designed to elicit negative emotions are used fairly frequently (Freimuth, Hammond, Edgar, & Monahan, 1990), their effectiveness has been challenged (e.g. Fishbein, Hall-Jamieson, Zimmer, von Haeften, & Nabi, 2002). As has already been noted, audiences may be motivated to avoid negatively valenced material and to reject the relevance of the message to their own lives. If audience members like a message, they may associate the persuasive message with a comfortable or rewarding situation and be motivated to accept that message–view it as relevant (Dillard et al., 2000). Reeves and Newhagen (1991), however, found that although negative messages elicited less attention, they were remembered better than positive messages.

A number of studies suggest that, regardless of actual attention and memory measures, individuals claim that they are more likely to be affected by positively valenced messages than by negatively valenced messages (Duck, & Terry, & Hogg, 1995; Gunther & Mundy, 1993; Gunther & Thorson, 1992; Snyder & Rouse, 1995). It is possible that the perceived self-relevance of the content of the messages may influence perceptions of the valence of a message. The emotions invoked by a PSA message may be enhanced or influenced by the perceived relevance of that message to an individual's own life and behavior. Thus, this study predicts that:

H2: Viewers will report more positive valence in response to high perceived self-relevance messages as compared to low perceived self-relevance messages.

Arousal, Attention, & Encoding

In this study, subjects were asked to view PSAs that had been pre-selected and rated for their relative calm-arousing content. Limited capacity theory predicts that arousing content is more likely to induce both physiological arousal (as determined by increases in skin conductance) and self-reported arousal (as rated on a SAM scale) among viewers (Lang, et. al, 1997). Individuals, however, may experience arousal differently. Both physiological and self-reported arousal may be enhanced if a risk message (anti-drug use message) is viewed as being relevant to a viewers' own life and behaviors. This study predicts that:

H3: As self-relevance increases, physiological arousal will increase
H4: As self-relevance increases, self-reported arousal will increase.

Personally relevant risk messages are not only likely to generate more arousal, but are also likely to receive more attention than less self-relevant ones. Viewers are more likely to voluntarily allocate processing resources to messages perceived as being self-relevant. Attention to messages can be assessed through measuring heart rates. A number of research studies have found that increased attention to television messages results in significant slowing of the heart rate (Lang, 1990: Lang, et al.,1997). This study also predicts that:

H5: As self-relevance increases, viewers' attention will increase.

Previous research has found that people are more likely to successfully encode familiar and relevant information into memory than unfamiliar material (Thorson & Lang, 1992). Subjects who report greater self-relevancy of PSAs are likely to have had greater exposure to, and experience with, related information. Consequently, not only are these types of messages likely to increase attention, but they will require less cognitive effort to interpret and store in memory. For this study, encoding was assessed by recognition of information conveyed in the PSA. Therefore, this study predicts that:

H6: As self-relevance increases, recognition will increase.

Similarity

In addition to investigating the role of perceived self-relevance in the processing and storage of PSA messages, this study also examined the ways in which perceived similarity to the characters in the PSAs was related to perceptions of self-relevance. Perceived similarity to media models has been found to be a major predictor of the persuasiveness of those messages (McGuire, 2001). Identification and perceived similarity to individuals in PSAs and other health campaign messages have been found to influence perceptions of self-relevancy and personal risk (Basil and Brown, 1997; Bandura, 1992). Overall assessments of perceived similarity to characters in the anti-drug PSAs are likely to be related to overall perceptions of self relevancy. This study tested the following hypothesis.

H7: Perceived similarity to characters in the PSA will be correlated with perceptions of self-relevance of PSA messages.

Similarity, however, has been measured in a variety of different ways (Chapin, 2000). Studies of the perceived impact of PSAs and other types of messages on self and others (e.g. Third Person Effect) and of differences in risk perceptions for self and other people (see Perloff, 1993) have operationalized "similarity" in a variety of different ways. For example, participants in Third Person Effect studies, usually college students, may be asked to assess media impact for self, "a friend of mine," or the "average adult" (e.g. Chapin, 2000). People may perceive self-relevancy of PSA messages differently depending upon whether similarity is assessed as similar to self, a friend, or ones' age group. For adolescents, who are particularly likely to be influenced by peers and peer norms, as well as their perceptions of the social norms for their age group, determining the relative importance of these types of assessments in relationship to perceived self-relevance is of use to PSA designers. It is also possible that individual experiences and exposure to drugs and tobacco may also determine perceived self relevance and perceived similarity. Thus, this study will investigate the following questions:

RQ2: What are the relationships between different measures of similarity (like me, like friend, like people in that age group) and perceived self-relevance?
RQ3: What are the correlations between exposure to drugs & tobacco, perceived similarity, and perceived self-relevance?

Method

Design

This study used a mixed Arousing Content (2) X Production Pacing (3) X Age (2) X Message (5) X Order of Presentation (3) factorial design. Arousing Content, Production Pacing, and Message were within-subject factors and Age and Presentation Order were between-subject factors. Two levels of arousing content (calm and arousing) and three levels of pacing (slow, medium and fast) were fully crossed resulting in six categories (calm-slow, calm-medium, calm-fast, arousing-slow, arousing-medium, and arousing-fast). Five messages were chosen for each category, resulting in a total of thirty messages. The messages were selected from a large pool of PSAs, and presented in three different orders. The subjects were randomly assigned to one of the three orders. When analyzing the heart rate data, there is also a within-subject Time factor which has 11 time points: 10 time points which are constructed by averaging heart rate over 2.5 second periods within the 30 second message and the baseline time point made up of the last heart beat before message onset.

Independent variables

Stimuli materials

Arousing Content. Arousing content had two levels (calm and arousing). In order to select messages which had calm or arousing content, a three-step process was followed. First, researchers rated each of the PSAs being considered for inclusion in this study, as low, medium, or high on arousing content. Within these categories, 6-10 messages were selected at each level of pacing (slow, medium and fast). Next, a small group of graduate students viewed these messages and rated their self-reported arousal. Using these ratings, a set of approximately 45 messages was selected for pre-testing. These messages were then shown to undergraduate participants in telecommunications courses. Participants rated their emotional responses to the messages using the Self Assessment Manikin (SAM) emotional self-report instrument (P. J. Lang & Greenwald, 1985; P. J. Lang, Bradley & Cuthbert, 1999). Within each production pacing level, the five most arousing and the five least arousing messages were chosen for inclusion in the final stimulus tape. The average arousal ratings for the calm messages ranged from 2.84 to 4.37 on a nine point scale and the average arousal ratings for the arousing messages ranged from 5.35 to 7.48. As was expected, the calm messages were actually moderately arousing. However, they were significantly less arousing than the arousing messages.

Pacing. Three levels of pacing (slow, medium, and fast) were created for this study. Previous research in this area has operationalized pacing in a number of ways including number of scene changes per time unit and number of camera changes per time unit. Lang (2000, 1999) argues that the cognitive load demanded by increases in pacing is directly related to the resource requirements of the structural feature being manipulated. Hence, scene changes require more processing resources than camera changes and, as a result, it will take fewer scene changes than camera changes per time unit to overload processing. In this study, it was discovered that very few youth targeted substance abuse PSAs were slow paced. Thus, a decision was made to control both the number of scene changes and the number of camera changes in order to manipulate pacing.

Both the number of camera changes and the number of scene changes were counted for each PSA being considered for inclusion in this study. Slow messages had 0-3 scene changes per thirty seconds. Medium messages had 7-10 scene changes per thirty seconds. Fast messages had 11-34 scene changes per message. In addition, the number of camera changes in the message was counted and then, a pacing index was created by adding the number of scene changes plus ½ the number of camera changes (because camera changes require fewer cognitive resources). Messages were selected so that there was no overlap between production pacing levels. That is, the combination of scene changes and camera changes for slow messages is always smaller than for medium messages and so on. For the final stimulus tape, slow messages had an average pacing index of 5.7; medium messages had an average pacing index of 20.4; and fast messages had an average pacing index of 43.35. Analysis of variance confirmed that the three levels of pacing differed significantly, $F(2, 27) = 71.98$, $p < .001$.

Age. Two different age groups were observed and compared in this study, college students and adolescents. Fifty nine undergraduates enrolled at a large Midwestern University participated in the experiment and received extra credits toward a communication course. Participants range in age from 18 to 27 ($M = 20.93$, $SD = 1.98$). Eighty six adolescents, who either attended a high school in the same area or were members of the Boys and Girls Club, participated in the study. Their age ranged from 12 to 17.

Dependent variables

Self-relevance. Self-relevance was measured for each PSA using a two item 9-point scale. Participants were asked to indicate their perceptions of whether "this PSA is relevant to me" and whether "this topic applies to me"; 1 indicated the PSA was not relevant to the subject whereas 9 indicated the PSA was relevant to the subject. As these two measures were highly correlated with each other ($r=.837$, $p<.000$), a single "Self Relevance" measure was created. For tests of the impact of self relevance upon valence, physiological arousal, self-reported arousal, and attention, and recognition, a median split (5.43) of self-relevance estimates for each PSA message was performed creating two categories of "Low" and "High"self relevant PSAs.

Valence. After viewing each message, the subjects also rated how positive or negative they felt using the Self-Assessment Mannequin (SAM) designed by P. J. Lang and his colleagues (P. J. Lang & Greenwald, 1985; P. J. Lang, Bradley & Cuthbert, 1999). SAM was devised as a picture-oriented scale to assess emotional response along the three dimensions of pleasure, arousal, and dominance. SAM has been used to measure viewers' emotional responses to televised message and has been shown as a reliable measure of evoked viewer emotion (A.Lang, Dhillon, & Dong, 1995; Morris, 1995; and Lang, Bolls, Potter, & Kawahara, 1999). The valence scale ranged from extremely positive to extremely negative.

Arousal. Viewer arousal was measured in two ways. First, self-reported arousal was measured on the SAM scale (self-reported arousal). One end on the arousal scale corresponded to extremely calm while the other end indicated extremely excited and aroused.

Second, physiological arousal was assessed by measuring participants' skin conductance responses. Skin conductance correlates highly with self-reported arousal (Greenwald, Cook, & P. Lang, 1989) and is a measure of activity in the sympathetic nervous system (Hopkins & Fletcher, 1994). Skin conductance was analyzed in two ways. First, the frequency of spontaneous skin conductance responses during each message was coded. Second, the amplitude of the largest spontaneous skin conductance response during each message was coded.

Attentional Effort. Controlled attention was assessed using heart rate. Generally, voluntary allocation of attention to an external stimulus will lead to slower heart rates (Caccioppo & Tassinary, 1995). Research on television has reliably shown decreases in heart rate associated with viewing and that these heart rate decreases correlate with other measures of attention, including secondary task reaction times and self-reported attention (Lang et al, 1999; Lang, Dhillon, & Dong, 1995).

Encoding. Recognition was used to assess encoding and was measured using forced choice four alternative multiple choice tests with four questions per message. For each message, a recognition question was developed for information contained in beginning, early middle, late middle, and late portion of the PSA.

Similarity. Similarity was measured for each PSA with three items also using a 9-point scale. The first item assessed self identification with the characters in the PSA; 1 indicated the characters in the PSA was not like me (the subject) while 9 indicated the characters in the PSA was like me (the subject). The second item measured the similarity between the characters in the PSA and the subjects' peers (friends); 1 indicating the characters were not like friends and 9 indicating the characters were like friends. The last item assessed participants' perceptions of how much the characters in the PSA were like the people in that age group; 1 indicated that the characters in the PSA were not like people in that age group while 9 indicated the characters were like the people in that age group. As the responses to the "Like Me" and "Like Friend" measures were highly correlated (r=.833, p<.000), a single "Similarity" measure was created and used to test the correlations between self-relevance and similarity.

Apparatus

The experiment was controlled by an Ampac 386 computer using the VPM as the master controller. Time code on the stimulus tape was read by an Horita TRG-50 PC Time Code Reader/Generator that interfaced with the Slimy program (Newhagen, 1993). For some subjects data collection was begun manually by the experimenter. The physiology computer was an Ampac 386 with a LabMaster AD/DA board installed. Physiology data were collected using VPM computer program, version 11.0 (Cook, 2000). Skin conductance response was measured by placing two Beckman standard AG/AGCL electrodes on the subject's non-dominant hand after washing the skin with distilled water to control hydration. The signal was passed to a Coulbourn SC module which provides a constant measurement voltage of .5V. Heart Rate was measured by placing a Beckman standard AG/AGCL electrode on each of the participant's forearms. A ground electrode was also placed on their non-dominant forearm. The stimuli tapes were played on a JVC videocassette player through a 25-inch color television set. Participants were seated in a comfortable chair placed approximately 5 ft. from the television set and were asked not to move the body as possible after the electrodes were in place. They were separated from the experimenter and all other equipments by an 8-ft. wall.

Procedure

Each subject completed the experiment protocol individually. Each subject was greeted upon arrival and signed an informed consent form (an assent form for the adolescents). Electrodes were placed in their forearms and hand, and were told that they would watch thirty television PSA messages and that we would, then, test their memory in the messages. Following each message, participants rated how they felt during the message using the SAM scale. They also rated self-relevance and similarity. After viewing all 30 messages, subjects performed two distractor tasks (reading an interactive web story and viewing 2 television news stories). Following the distractor tasks, the subjects took the recognition test. Finally, the subjects were thanked and dismissed.

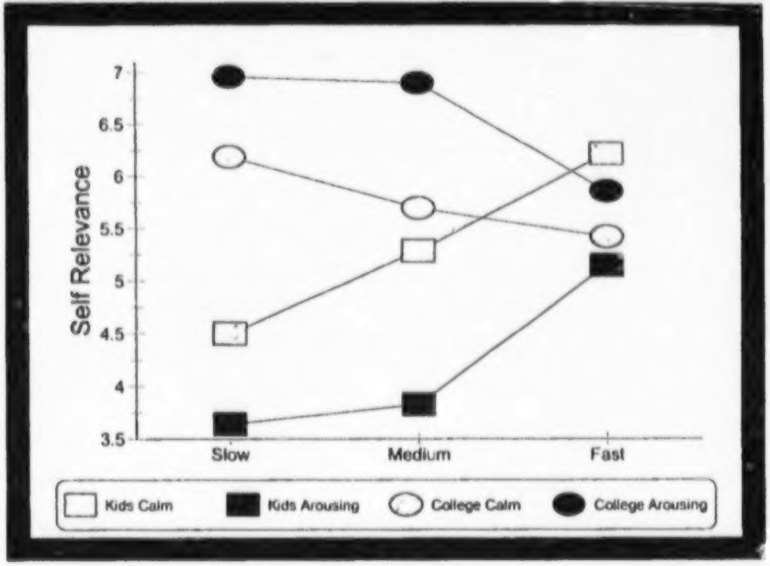
Results

Hypothesis 1 and Research Question 1

Hypothesis 1a and 1b and the first two research questions concerned the effects of arousing content and message pacing on viewers perceived self relevance. There is no significant main effect for Arousing Content on the self relevance data. There is a significant main effect of Pacing on the self relevance data, but this main effect should be considered in light of the primary effect which is an Age X Arousing Content X Pacing interaction (F (2,230) = 11.07, p <.000). This interaction is shown in Figure 1.

First, as can be seen in this figure, college students rate these public service announcements as more self relevant overall than do adolescents (F (1,115) = 21.12, p<.000). Further, the effect of Pacing on self relevance is opposite for college students compared to adolescents (F (2,230) = 80.00, p<.000). For adolescents, increased pacing increases self relevance, for college students, increased pacing decreases self relevance. Finally, the effect of arousing content is also opposite for college students compared to adolescents (F (1,115) = 76.51,p <.000). For college students, more arousing content is more self relevant. For adolescents, less arousing content is more self relevant.

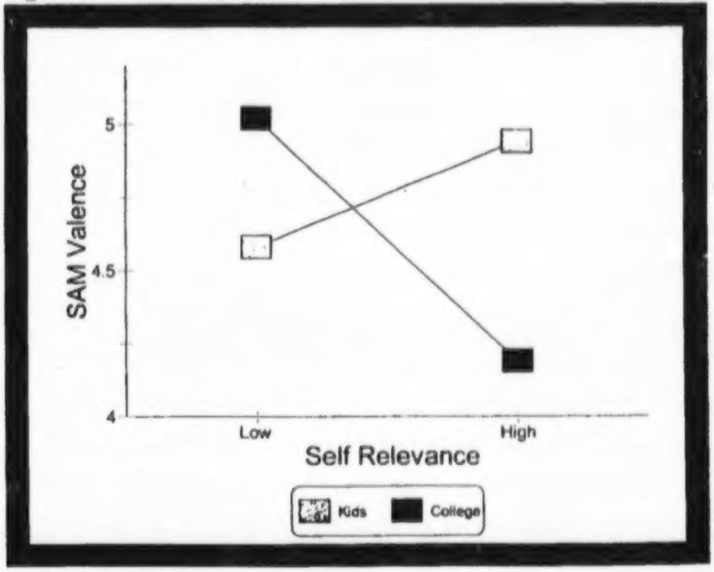
Figure 1



Hypothesis 2

This hypothesis predicts that viewers will report more positive valence in response to high perceived self relevance messages as compared to low perceived self relevance messages. This effect was tested by the main effect for Self Relevance on the SAM valence measure. This effect was significant (F (1,111) = 11.52, p <.001). Overall, low self relevant messages received a rating of 4.76 compared to high self relevant messages which received a rating of 4.63. Thus, this main effect suggests that low self relevant ads were rated more positively compared to high self relevant ads. However, this main effect needs to be interpreted in light of several significant interactions on the SAM valence data. First, there was a significant Age X Self Relevance

Figure 2



BEST COPY AVAILABLE

interaction (F(1,111) = 63.79, p <.000). This interaction is shown in Figure 2. As can be seen in this figure, for adolescents, greater self relevance leads to more positive ratings. On the other hand, for college students, greater self relevance leads to more negative ratings.

In addition to this interaction there is also a significant Arousing Content X Pacing interaction (F(2,222) = 85.630, p <.000), a significant Arousing Content X Pacing X Self Relevance (F(2,222) = 6.88, p <.001), and a significant Age X Arousing Content X Pacing X Self Relevance interaction (F(2,222) = 26.58, p <.000. The four way interaction is shown in Figure 3 and 4.

This four way interaction tells the whole story. First, calm messages are rated more positively than arousing messages. Second, the effect of pacing is much greater on arousing messages, then it is on calm messages. Third, college students continue to rate low self relevance messages more positively than adolescents who rate high self relevance messages more positively. Fourth, increased pacing increases ratings of positivity.

igure 3

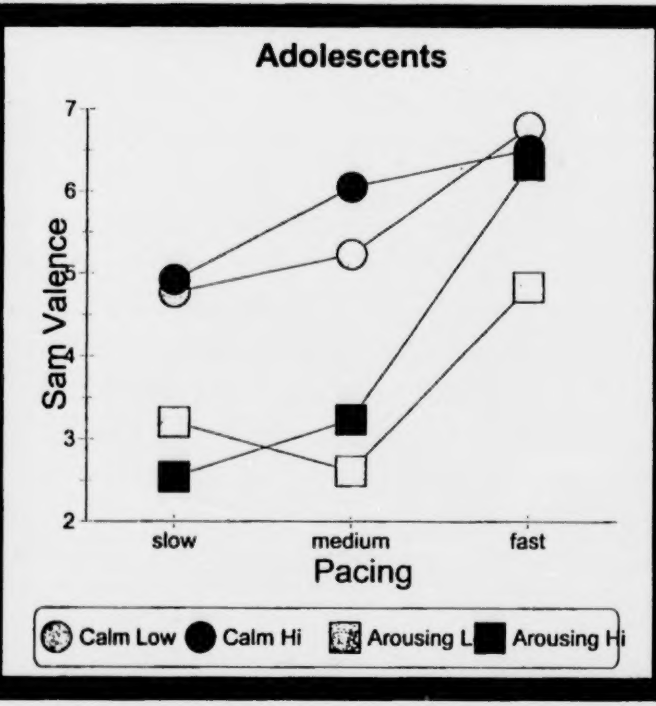
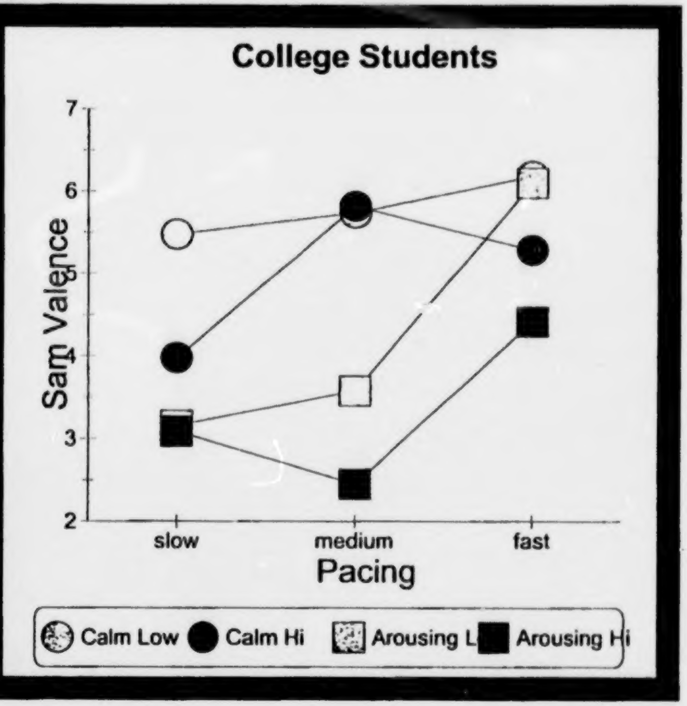


Figure 4

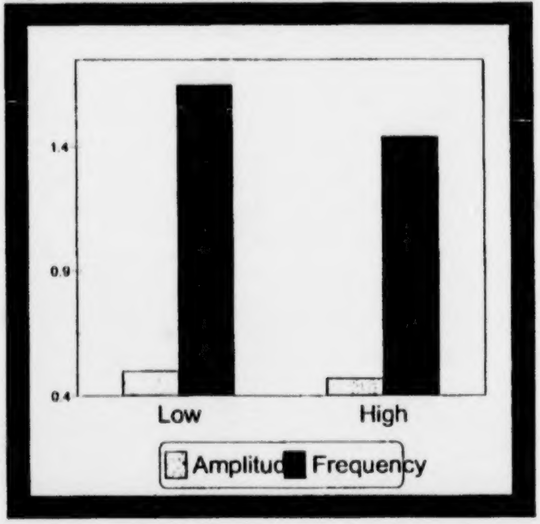


Hypothesis 3

This hypothesis predicts that as self relevance increases physiological arousal will increase. We had two measures of physiological arousal, amplitude of spontaneous skin conductance responses and frequency of spontaneous skin conductance responses. For both amplitude and frequency there was a significant Self Relevance main effect on the data (amplitude: F (1,131) = 4.56, p <.035; frequency: F (1,131) = 25.85, p <.000). These

BEST COPY AVAILABLE

Figure 5



main effects are shown in Figure 5. For both amplitude and frequency, skin conductance was higher for low self relevant messages than it was for high self relevant messages. However, this needs to be interpreted in light of significant interactions in the data. For both the amplitude (F (2,262) = 7.02, p <.001) and the frequency data (F (2,262) = 14.79, p <.000), there is a significant Arousing Content X Pace X Self Relevance interaction. This interaction, for the amplitude data, is shown in Figure 6.

As can be seen in this figure, the interaction of Arousing Content and pacing is disordinal, and the effect of self relevance turns this interaction around. Thus, for low self relevant messages, increasing pacing increases arousal for calm messages and decreases arousal for arousing messages. The reverse is true for high self relevant messages. In this case, increasing pacing has no effect on skin conductance for calm messages but increases skin conductance for arousing messages.

Figure 6

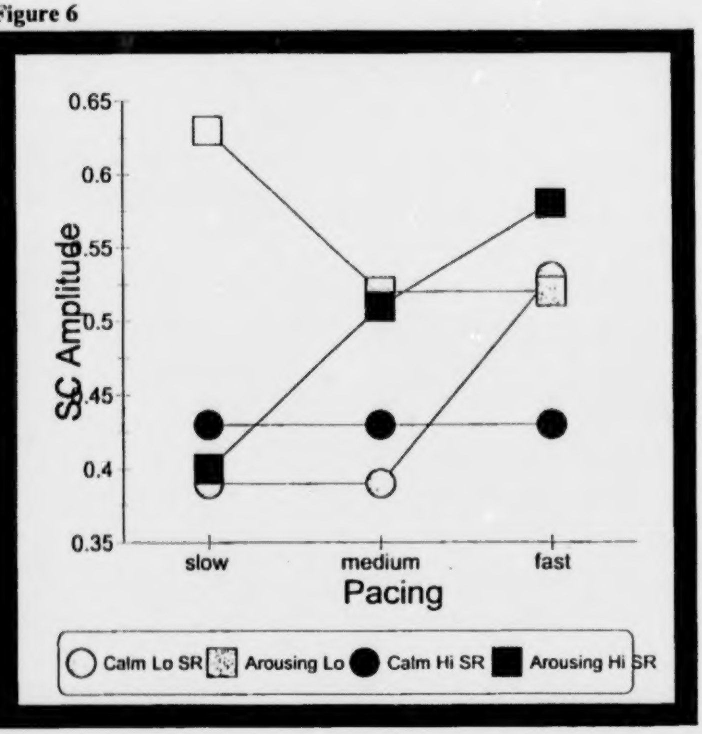
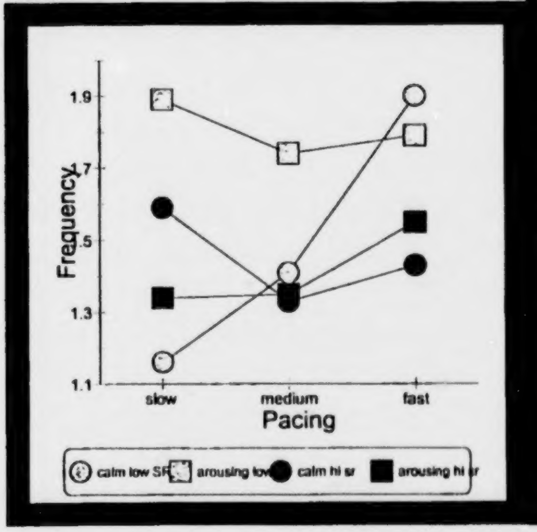


Figure 7

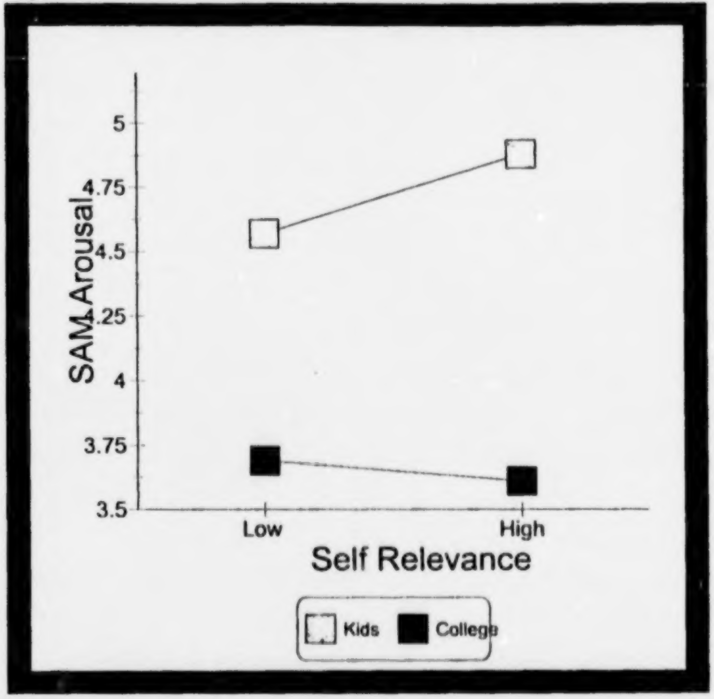


The effect on the frequency data is shown in Figure 7. As can be seen in this figure, arousal is greatest for arousing low self relevant messages, with pacing having its greatest effects on calm low self relevant messages. For high self relevant messages,

BEST COPY AVAILABLE

however, pacing decreases arousal for calm messages and increases arousal for arousing messages.

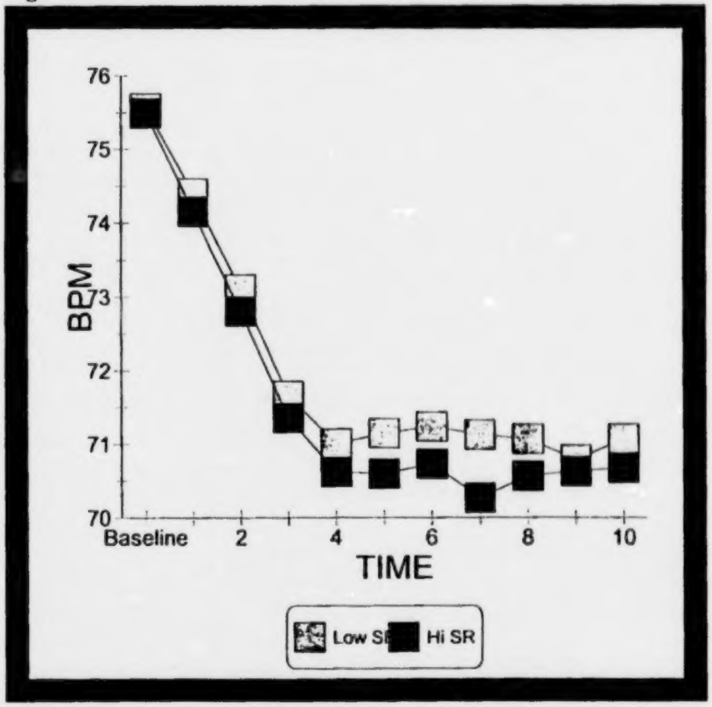
Figure 8



Hypothesis 4

This hypothesis predicted that increasing self relevance would lead to increasing self reported arousal. The main effect of Self Relevance on the self-reported arousal variable is significant (F (1,101) = 6.03, p <.016). In addition, there are many significant interactions, including and Age X Arousing Content X Pacing X Self Relevance interaction (F (2,202) = 6.56, p <.002). However, we are illustrating this data with the significant Age X Self Relevance interaction (F (1,101) = 8.86, p <.004) which is shown in Figure 8. As can be seen in this figure, adolescents rate high self relevant ads as more arousing than low self relevant ads, and the reverse is true for college students. In addition, adolescents rate all the ads as much more arousing than do the college students. It is interesting to note that there are no main effect differences in physiological arousal between the college students and the adolescents. But there is a significant main effect for self reported arousal (F (1,101) = 19.21, p <.000) with adolescents rating all of the messages as more arousing compared to be college students.

Figure 9



Hypothesis 5

This hypothesis predicted that as self relevance increases, viewers' attention will increase. This hypothesis was tested by looking at the effects of self relevance on the heart rate data. The prediction is for a Self Relevance X Time interaction. This interaction was significant (F (10, 1290) = 2.35, p <.01). This interaction is shown in Figure 9. As can be seen in this

BEST COPY AVAILABLE

figure, heart rate is slower, indicative of greater attention, to high self relevant PSAs compared to low self relevant PSAs.

Hypothesis 6

This hypothesis predicted that as self relevance increases recognition will increase. As expected, the self relevance main effect was significant (F (1,132) = 8.84, p <.004). This main effect is shown in Figure 10. High self relevant messages were recognized better than low self relevant messages. In addition to this main effect, there was an interaction with Age (F (1,132) = 5.09, p <.026). This interaction is shown in Figure 11. As can be seen in the figure, self relevance had no effect at all on adolescents' recognition for information presented in the PSAs. For college students, however, Self Relevance was an important factor, with high self relevant PSAs being recognized at a greater rate than low self relevant PSAs.

Figure 10

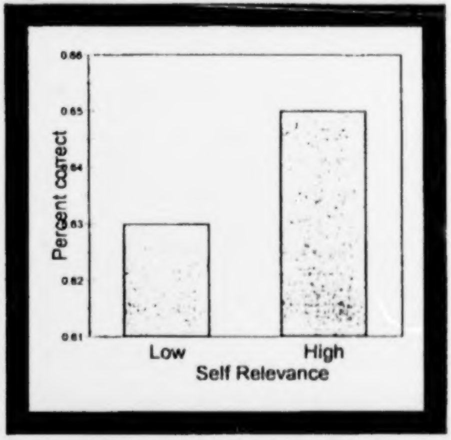
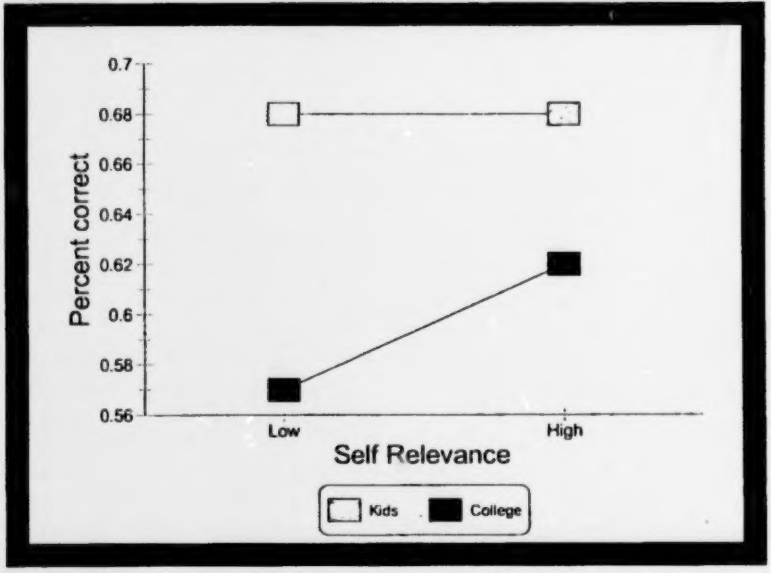


Figure 11



Hypothesis 7

This hypothesis tested the prediction that the similarity measures would be correlated with the perceived self relevant measure. Self relevance ratings were summed across messages and the hypothesis was computed by testing the Pearson correlation between the Similarity measure and the Self Relevance measure. This correlation was significant and quite large (r=.75, p<.000). Not surprisingly, as self relevance increases perceived similarity also increases.

Research Question 2

This research question asks about the relationship between various similarity measures (like me, like a friend of mine, like people in that age group) and the self relevance measure. A correlational analysis was run and the results are shown in Table 1. As can be seen in the table, the similarity measures "Like me" and "Like Friends" are closely correlated with perceived relevance. The measure "like people in that age group" is less strongly correlated.

BEST COPY AVAILABLE

Table 1: Correlations between Similarity Measures and Perceived Self-Relevance

Measure	Self-Relevance
Like Me	.72**
Like Friends	.71 **
Like Age	.30*

*p<.05, **p<.005

Research Question 3

This research question asks about correlations between substance use measures for alcohol and cigarettes and the similarity and perceived self relevance measures. Results of this analysis are shown in Table 2.

Table 2: Correlations Among Use and Similarity and Perceived Self-Relevance

Measure	Self Relevance	Similarity
Cigarettes	.207 (p=.137)	*.297 (p=.03)
Alcohol	.217 (p=.122)	*.290 (p=.03)

*p<.05

As can be seen from this table, there are modest correlations between similarity and use. The correlations between perceived relevance and use are smaller and not significant.

Discussion

Generally, the results of this study demonstrate that perceived self relevance is an important variable in determining how adolescents and college students process health information on television. Perceived self relevance of messages impacts every stage of processing from evaluation, to attention, to arousal, to recognition. In general, increasing self relevance increases cognitive variables (attention and recognition) for both college students and adolescents. For the more emotional or evaluative measures (self-reported arousal, physiological arousal, and valence ratings) the effect of perceived self relevance is dependent on age. There were strong and persistent interactions with the age of viewers for these variables.

Perhaps one of the most interesting findings in this study is the disconnect between self reported arousal and physiological arousal. In general, these two variables tend to be closely related. However, in this study, there seem to be strong differences between the story told by self-report and the story told by physiology. Adolescents self-report high self relevant public service announcements as being more arousing than low self relevant public service announcements. In addition they self reported a great deal more arousal than did the college students. However, a glance at the physiological results tell a completely different story. First, there are no differences at all in arousal between the college students and the adolescents. Thus, though there is a big self-reported difference, it is not borne out by physiological response. Second, the physiological data shows strong and significant interactions between the formal feature variables and physiological arousal, but these interactions are not particularly strong or important in the self-report data.

Also of interest, are the effects of arousing content and pacing on perceived self relevance. Again there was a large interaction between Age, Arousing Content, and

Pacing. The effects of Pacing and Arousing content are completely reversed on adolescents compared to college students. Thus, to create a self relevant public service announcements for college students, you should make it slow paced (and either arousing or calm). To create a self relevant advertisement for adolescents, you should make it fast paced (and either arousing or calm).

Another very interesting finding is that increased self relevance increases positive valence for adolescents and decreases positive valence for college students. Thus, creating a highly self-relevant ad will create a more positive emotional state for adolescent viewers and a less positive emotional state in college viewers.

Clearly additional work needs to be done to understand how content and form alter self relevance in different age groups and how perceived self relevance impacts further processing of messages.

References

Atkin, C. K. Theory and Principles of media health campaigns. In Atkins, C. K. & Rice, R. A. Public communication campaigns (2nd ed.) (pp. 22-49). Thousand Oaks, CA: Sage.

Bandura, A. (1992). A social cognitive approach to the exercise of control over AIDS infection. In R. DiClemente (Ed.), Adolescents and AIDS: A generation in jeopardy (pp. 89-115). Newbury Park, CA: Sage

Basil, M. D., & Brown, W. J. (1997). Marketing AIDS prevention: The differential impact hypothesis versus identification effects. Journal of Consumer Psychology, 6(4), 389-411.

Cappella, J.N., Fishbein, M., Hornik, R., Ahern, R. K., & Sayeed, S. (2001). Using theory to select messages in antidrug media campaigns: Reasoned action and priming. In Atkins, C. K. & Rice, R. A. Public communication campaigns (2nd ed.) (pp. 214-230). Thousand Oaks, CA: Sage.

Culbertson, H. M., & Stempel, G. H. (1985). Media malaise: Explaining personal optimism and societal pessimism about health care. Journal of Communication, 35, 180-190.

Dillard, J. P., Price, J. & Peck, E. (2000). Affect and persuasion. Communication Research, 27(4), 461-495).

Doob, A.N., & MacDonald, G.E. (1979). Television viewing and fear of victimizataion: Is the relationship causal? Journal of Personality and Social Psychology, 37, 170-179.

Duck, J. M., Terry, D. J., & Hogg, M. A. (1995). The perceived influence of AIDS Advertising: Third-person effects in the context of positive media content. Basic and Applied Social Psychology, 17(3), 305-325.

Fishbein, M., Hall-Jamieson, K., Zimmer, E., von Haeften, I., & Nabi, R. (2002). Avoiding the boomerang: Testing the relative effectiveness of antidrug public service announcements before a national campaign. American Journal of Public Health, 92(2), 238-246.

Fiske, S. & Taylor, S. (1984). Social cognition. New York: Random House.

Flora, J.A. & Maibach, E. W. (1990). Cognitive responses to AIDS information: The effect of issue involvement and message appeal. Communication Research, 17, 759-774.

Freimuth, V. S., Hammond, S. L., Edgar, T., & Monahan, J. L. (1990). Reaching those at risk: A content analysis of AIDS PSAs. Communication Research, 6, 775-791.

Greenwald, M. K., Cook, E. W., & Land, P. J. (1989). Affective judgment and psychophysiological response: dimensional covariation in the evaluation of pictorial stimuli. Journal of Psychophysiology, 3, 51-64.

Gunther, A. C., & Mundy, P. (1993). Biased optimism and the third person effect. Journalism Quarterly, 70, 58-67.

Gunther, A. C., & Thorson, E. (1992). Perceived persuasive effects of product commercials and public service announcements: Third person effect. Communication Research, 19, 574-596.

Hopkins, R., & Fletcher, J. E. (1994). Electrodermal Measurement: Particularly effective for forecasting message influence on sales appeal. In A. Lang (Ed.), Measuring psychological responses to media messages (pp. 113-132). Hillsdale, NJ: Lawrence Erlbaum Assoc.

Lang, A. (1990). Involuntary attention and physiological arousal evoked by structural features and emotional content in TV commercials. Communication Research, 17(3), 275-299.

Lang, A, Dhillon, K., & dong, Q (1995). The effects of emotional arousal and valence on television viewers' cognitive capacity and memory. Journal of Broadcasting and Electronic Media, 39(3), 313-327.

Lang, A., Bolls, P., Potter, R., & Kawahara, K. (1999). The effects of production pacing and arousing content on the information processing of television messages. Journal of Broadcasting and Electronic Media, 43(4), 451-476.

Lang, A. Zhou, S., Schwarz, N., Bolls, P.D., & Potter, R. F. (2000). The effects of edits on arousal, attention, and memory for television messages: When an edit is an edit can edit be too much? Journal of Broadcasting and Electronic Media, 44, 94-109.

Lang, A., Newhagen, J. & Reeves, B. (1996). Negative video as structure: Emotion, attention, capacity, and memory. Journal of Broadcasting and Electronic Media, 40(4), 460-477.

Lang, A., Zhou, s., Bolls, P. D., & Potter, R. F. (2000). The effects of edits on arousal, attention, and memory for television messages. Journal of Broadcasting and Electronic Media, 44(1), 94-109.

Lang, P. J. & Greenwald, M. K. (1985). The International affective picture system slides and technical report. Gainesville: Center for Research in Psychophysiology.

McGuire, W. J. (2001). Input and output variables currently promising for constructing persuasive communications. In Atkins, C. K. & Rice, R. A. Public communication campaigns (2nd ed.) (pp. 22-49). Thousand Oaks, CA: Sage.

Morris, J. D. (1995). Observations: SAM the Self-Assessment Manikin–an efficient cross-cultural measurement of emotional response. Journal of Advertising Research, 35(6), 63-68.

Newhagen, J. E. & Reeves, B. (1992). The evenings bad news: Effects of compelling negative television news images on memory. Journal of Communication, 42(2), 25-41.

Perloff, R. M. (1993). Third-person effect research 1983-1992: A review and synthesis. International Journal of Public Opinion, 5(2), 167-184.

Reeves, B. R., & Newhagen, J. (1991). Negative and positive television messages. American Behavioral Scientist, 34(6), 679-686.

Snyder, L., & Rouse, R. A. (1995). The media can have more than an impersonal impact: The case of AIDS risk perceptions and behavior. Health Communication, 7(2), 124-145.

Thorson, E.L. & Lang, A. (1992). The effects of television videographics and lecture familiarity on adult cardiac orienting responses and memory. Communication Research, 19(3), 346-369.

Tyler, T. R., & Cook, F. L. ((1984)). The mass media and judgments of risk: Distinguishing impact on personal and societal level judgments. Journal of Personality and Social Psychology, 47(4), 693-708.

Weinstein, N. D. (1984). Why it Won't Happen to Me: Perceptions of Risk Factors and Susceptibility. Health Psychology, 3, 431-457.

Weinstein, N. D. (1987). Unrealistic optimism about susceptibility to health problems: Conclusions from a community-wide sample. Journal of Behavioral Medicine, 10(5), 481-500.

A Structural Equation Model of the Uses and Gratifications Theory: Ritualized and Instrumental Internet Usage

Presented to the Comm Theory and Methodology Division
(for the Student Paper Competition)

March, 2002

Submitted by
Hanjun Ko
Doctoral Student
College of Journalism and Communications
University of Florida
Gainesville, FL 32611

Home address: 376 SW 62nd Blvd. #7,
Gainesville, FL 32607

Phone: 352-332-0482 (home)
E-mail: hanjunko@ufl.edu

Abstract

A Structural Equation Model of the Uses and Gratifications Theory: Ritualized and Instrumental Internet Usage

In this study, the uses and gratifications theory was applied to investigate whether motivations for using the Internet could explain one of the key aspects of Internet usage: visiting certain types of Web sites. The proposed latent variable path model identified some of the causal relationships between the motivational factors and the types of Web sites visited by Internet users. The results showed a similar pattern with previous uses and gratifications research and also distinguished the ritualized and instrumental orientations in using the Internet.

A Structural Equation Model of the Uses and Gratifications Theory: Ritualized and Instrumental Internet Usage

Introduction

There is little doubt that the Internet has created enormous increases in its applications and the number of its users during a considerably short period of time. As surfing the World Wide Web (WWW) and exchanging electronic mail (e-mail) gets easier and more indispensable in daily life, the Internet has become a viable threat to traditional media, such as television and telephone. Accordingly, it is expected that people from all demographic and socioeconomic backgrounds will be Internet users, and online households will be similar to the general household by 2004 (Pastore, 2000). With respect to the numerous unique benefits that distinguish the Internet from other traditional media, there are three main reasons that make the Internet a substantial communication tool: information, versatility, and interactivity. First, people can find virtually any information on the Web by just typing in a few key words (Alba et al., 1997). Second, the medium single-handedly performs several distinguished functions of traditional mass media, such as television, radio, newspaper, magazine, and even telephone (Atkin, et al., 1998). Therefore, people can be entertained by the versatility of the Internet, which can deliver text, graphics, images, audio, and video at the same time (Eighmey, 1997). Finally, the Internet also allows for an interactive many-to-many communication circumstance (Ghose and Dou, 1998). Therefore, people can interact with computers or other people through discussion groups, e-mail, direct ordering, and links to more information (Schumann and Thorson, 1999).

Considering such revolutionary changes brought by the Internet, it is natural that the medium has become one of the popular scholarly subjects for many researchers in the field of mass communication (Kaye and Johnson, 2001). However, it still seems that few studies done so far deal with systematic examinations concerning why and how people use the Internet in terms of their motivations and behaviors (Flanagin and Metzger, 2001). Moreover, it also seems that there exists only a crude understanding of the reasons why people visit a certain type of Web site considering that the Internet provides an unlimited and diverse range of selections for its users. Therefore, it is important to examine the psychological aspects of Internet usage in terms of needs and motivations toward the medium. In addition, it is also important to identify behavioral aspects of Internet usage based on users' experience of visiting certain types of Web sites. Consequently, an underlying assumption of this study is that people actively select a Web site in order to satisfy their particular needs, and different motivations for using the Internet would affect the visiting of certain types of Web sites.

The main objective of this study is to examine the causal relationships between motivations for using the Internet and the visiting of certain types of Web sites. The major theoretical framework of this study is the uses and gratifications theory because this theory has effectively provided one of the most relevant perspectives to explain psychological and behavioral dimensions involving mediated communications (Ruggiero, 2000; Lin, 1996). For this purpose, this study develops a structural equation model of the Internet uses and gratifications theory that links a number of Internet usage motivations to certain types of Web sites. Based on this model, this study involves an evaluation of the presumed causal relations between why and how people use the Internet.

In the following section, previous uses and gratifications research is reviewed, especially focusing on Internet uses and gratifications research, in order to lay the basis for developing the hypothesized model and research methodology.

Literature Review

Uses and Gratifications Research

The uses and gratifications theory is considered a psychological communication perspective that focuses on individual use and choice by assessing reasons for using a certain type of media, as well as the various gratifications obtained from the media use (Severin and Tankard, 1997). In other words, this theory assumes that media users are goal-directed, and gratifications expected or obtained from media experiences cause media choices (Parker and Plank, 2000). Therefore, a primary goal of uses and gratifications research is to understand a set of the major motivational factors that make people engage in media use. As emerging new media, along with conventional mass media, provide people with a wider range of media selection and contents, the uses and gratifications theory is considered one of the most effective paradigms for identifying media exposure in mass communication studies (LaRose el al., 2001). Although media usage motives vary among individuals, situations, and media vehicles; most uses and gratifications studies deal with some or all of the following motivational dimensions: relaxation, companionship, habit, pass time, entertainment, social interaction, information/surveillance, arousal, and escape (Lin, 1999).

Evolution of uses and gratification research has kept pace with the development of communication technologies. This means audiences' motivations and decisions to use a certain type of mediated communication tool have been investigated by researchers whenever a new technology enters the stage of mass communication (Elliott and Rosenberg, 1987). Therefore, previous uses and gratification studies have dealt with virtually every kind of mediated communication tool from traditional media, such as newspapers (Elliott and Rosenberg, 1987) and television (Rubin, 1983;

Rubin, 1985; Babrow, 1987; Conway and Rubin, 1991), through nontraditional media, including VCR (Levy, 1987; Cohen et al., 1988), computer mediated communication (Eighmey, 1997; Korgaonkar and Wolin, 1999; Papacharissi and Rubin, 2000; Flanagin and Metzger, 2001; Lin, 2001), and even cellular phone (Leung and Wei, 2000). These studies have offered insights regarding various reasons why individuals use a certain medium of communication, as well as the relations between expected and obtained gratifications resulting from media use motivations (Rubin, 1994). Furthermore, previous uses and gratifications research also showed that either different mass media or different contents within an individual medium can gratify different needs of media users (Kaye and Johnson, 2001).

As an attempt to identify the relationship between motivations and media contents from the uses and gratification perspectives, Rubin (1984) argued that a variety of motivations can be largely divided into two types of media usage orientations: ritualized and instrumental orientations. He maintained that each media usage orientation is related to different types of media content. On the one hand, ritualized orientation indicates using a medium more habitually to consume time or to escape from current problems (Rubin, 1994). In a case of watching television, this orientation is associated with the entertainment types of programs, such as action/adventure, game, music, drama, and general comedy programs. On the other hand, instrumental orientation is a purposive use of media content to seek information (Conway and Rubin, 1991). Therefore, this orientation relates to greater exposure to news and information contents. In sum, it is shown that this theoretical development provided a better way to understand audience activity, which is one of the core concepts in the uses and gratification perspective.

Internet Uses and Gratifications Research

The rapid growth of the Internet has strengthened the potency of the uses and gratifications theory because this medium requires that its users to be more active, as compared to other traditional media (Ruggiero, 2000). While people are exposed to television or radio in a relatively passive way, Internet users more actively engage in using the medium by searching out information or exchanging messages (Kaye and Johnson, 2001). Since one of the major strengths of the Internet is its interactivity, it is natural that the uses and gratification perspective, which contains audience activity as its core concept, is regarded as one of the most effective theoretical bases to study this medium. For this reason, many researchers have examined psychological and behavioral aspects of Internet users to identify a set of common underlying dimensions for motivations (Lin, 1999; LaRose et al., 2001).

In an early attempt at Internet uses and gratifications research, Rafaeli (1986) argued that people using university computer bulletin boards are satisfying the following needs: recreation, entertainment, and diversion. With respect to the uses of the World Wide Web, Eighmey and McCord (1998) investigated users of commercial Web sites based on the findings of previous research on radio and television. They found that entertainment value, personal relevance, and information involvement are three major motivational factors for surfing commercial Web sites. Korgaonkar and Wolin (1999) examined Internet users' motivations and concerns by categorizing 41 items into seven factors: social escapism, transactional security and privacy, information, interactive control, socialization, nontransactional privacy, and economic motivation. Additionally, they investigated the relationship between the seven motivational factors and the three usage contexts: time spent on the Web, time spent on the Web for business and personal purposes, and purchase from a Web business. They reported that motivations for using the Internet are significantly correlated with the three usage contexts. The study of Korgaonkar and Wolin suggested that people use the Internet not only for retrieving information but also for seeking entertainment and escape as well. Lin (1999) adopted a different approach from previous Internet uses and gratifications research, because she tried to identify the relationship between Internet use motives and the likely online-service adoption. For this purpose, she conducted a series of multiple regression analyses with three Internet usage motivations (escape, surveillance, and entertainment) as independent variables and each of three types of Web sites (information, infortainment, and shopping) as a dependent variable. As a result, the surveillance motivation was the strongest for visiting both information and infortainment Web sites, whereas the shopping sites were strongly affected by the entertainment and the surveillance motivations. However, it should be noted that the Web sites classification of this study was based on respondents' likelihood of using a certain online-service instead of their actual experience. Papacharissi and Rubin (2000) developed a scale of Internet usage motivations. In this process, they derived five primary motives for using the Internet via principal components analysis: interpersonal utility, pass time, information seeking, convenience, and entertainment. Ferguson and Perse (2000) examined whether Internet usage motivations (entertainment, pass time, relaxation, social information, and information) would predict what certain types of Web sites respondents had visited in a certain time period. They showed that the search engine sites are most strongly related with the information motivation, while the interactive sites are related with the entertainment motivation. In sum, the uses and gratifications theory has been quite effective in understanding motivations and needs for using the Internet.

Hypothesized Model

Extending past research on the uses and gratification theory in relation to the Internet, this study proposes a theoretical model for the relationship between motivations for using the Internet and visits of certain types of Web sites (see Figure 1). In the first instance, the objective of this study is to find an acceptable CFA measurement model that represents theoretical constructs of Internet usage motivations and types of Web sites. Based on a series of exploratory factor analyses and the study of Kaye and Johnson (2001), in which a variety of motivational factors were presented from previous Internet uses and gratifications research, this study postulates that there are four major motivations for using the Internet: *Information, Interactivity, Pass Time*, and *Escape*. Even though past research also provided additional motivational factors, such as personal relevance (Eighmey and McCord, 1998), socialization (Korgaonkar and Wolin, 1999), surveillance (Lin, 1999), and interpersonal utility (Papacharissi and Rubin, 2000), it seems that these motivations share similar meanings and needs with the four motivational factors of the hypothesized model of this study. For instance, the interpersonal utility motivation is similar to the *Interactivity* motivation, and the surveillance motivation implies the *Information* motivation. Therefore, this study hypothesizes that the four motivations (*Information, Interactivity, Pass Time*, and *Escape*) are the major motivational factors for using the Internet.

With respect to the classification of Web sites, Frazer and McMillan (1999) said that most categorization systems of Web sites are based on the contents of each Web site. For instance, most search engines and Internet yellow pages adopt a contents-based classification method to provide users with convenient ways to find a Web site. *Yahoo*, one of the most popular portal sites, presents approximately 20 product and service categories as of December 2000 (URL: http:// www.yahoo.com).

Based on this method, Lin (1999) classified numerous Web sites into three categories: *Information, Infortainment,* and *Shopping*. In terms of an ideal number of factors to extract, Lin's study showed that three factors could be effective in classifying most Web sites. Nonetheless, it should be noted that she did not sort out the entertainment Web sites as an individual factor in the classification. Previous Internet uses and gratification research argued that entertainment is one of the most important motivations for using the Internet (Papacharissi and Rubin, 2000; Parker and Plank, 2000). However, in Lin's study, the entertainment sites were part of the infortainment sites, while the shopping sites were considered as an individual factor. Since past non-store and online shopping research identified that both information and entertainment motivations are important factors for online shopping (Gehrt and Carter, 1992; Alba et al., 1997), this study assumes that the shopping sites should be included in the infortainment factor. Consequently, the entertainment sites should be substituted for the shopping sites as an individual factor. Therefore, this study hypothesizes that there are three major categories of Web sites: *Information, Infortainment*, and *Entertainment* sites. Based on the hypothesized model in Figure 1, the following seven latent variables are examined in this study:

- Four motivations (exogenous variables):
  - *Information motivation* (X_1)
  - *Escape motivation* (X_2)
  - *Pass Time motivation* (X_3)
  - *Interactivity motivation* (X_4)
- Three types of Web sites (endogenous variables):
  - *Information sites* (Y_1)
  - *Infortainment sites* (Y_2)
  - *Entertainment sites* (Y_3)

As shown in Figure 1, this study also postulates the causal relationships between the four motivational factors and the three types of Web sites, based on the ritualized and instrumental orientations provided by Rubin (1984). Drawing on past research with ritualized and instrumental orientations, this study assumes that these two media usage orientations can be applied to visiting certain types of Web sites. Based on this assumption, the *Information* motivation for using the Internet is considered an instrumental orientation, while the *Escape* and the *Pass Time* motivations as ritualized motivations. Therefore, this study hypothesizes causal relationships between Internet usage motivations and types of Web sites as follows. First, the *Information* motivation would affect visiting the *Information* Web sites, while the *Escape* and the *Pass Time* motivations would affect visiting the *Entertainment* sites. Second, since the *Infortainment* sites contain characteristics of both information and entertainment sites (Lin, 1999), this study also postulates direct paths from the *Information*, the *Escape*, and the *Pass Time* motivations to the *Infortainment* Web sites. Finally, with respect to the *Interactivity* motivation, Internet users are expected to, more or less, actively engage in interacting with either other users or Web sites for both media usage orientations. Therefore, this study hypothesizes that the *Interactivity* motivation is linked to all three types of Web sites. Based on the aforementioned causal relationships, the proposed path model among the seven latent variables can be represented by the following three linear equations:

$$\mathit{Information\,Sites} = \gamma_{11}\mathit{Information} + \gamma_{14}\mathit{Interactivity} + \zeta_1$$

$$\mathit{Entertainment\,Sites} = \gamma_{22}\mathit{Escape} + \gamma_{23}\mathit{Pass\,Time} + \gamma_{24}\mathit{Interactivity} + \zeta_2$$

$$\mathit{Infortainment\,Sites} = \gamma_{31}\mathit{Information} + \gamma_{32}\mathit{Escape} + \gamma_{33}\mathit{Pass\,Time} + \gamma_{34}\mathit{Interactivity} + \zeta_3$$

Research Methodology

Sample and Data Collection

Survey research is a predominant uses and gratifications method and has been consistently validated by past studies (Rubin, 1994). Therefore, the original data for this study were collected via a self-report questionnaire, which has been useful for analyzing motivations and media usage patterns (Conway and Rubin, 1991). The study sample consisted of 392 students from a large southeastern university. Of the surveys collected, 385 were usable for the analyses of this study. For the purpose of this study, only those who had used the Internet were selected to participate in the survey. Respondents ranged in age from 18 to 37. With respect to the student sample, it is possible that the results of this study might not be generalizable to all kinds of people. However, the U.S. population that falls into the 18 to 34 age group still remains the most active online users in spite of the increase in older age groups using the Internet, according to the demographic analysis of Pastore (2000). The mean age was 22.52 years (SD=2.99), and the median age was 22 years. The sample was distributed rather evenly among male (48.8%) and female (51.2%).

Internet Usage Motivations

Respondents were asked to indicate their level of agreement with fifteen statements, based on prior uses and gratifications research, about reasons for using the Internet (Rubin, 1983; Korgaonkar and Wolin, 1999; Papacharissi and Rubin, 2000). In this process, a review of relevant literature was used to develop an initial item pool, and then the reviewed items were modified and adjusted to this study context. Initially, each statement was derived from the following four motivational dimensions:

the *Information* motivation, the *Escape* motivation, the *Pass Time* motivation, and the *Interactivity* motivation. The statements for Internet usage motivations are presented in Table 1. These fifteen statements were supposed to cover most of the motivational dimensions of Internet users. A seven-point scale was used ranging from 1 (strongly disagree) to 7 (strongly agree) about each statement.

Types of Web Sites

In order to conceptualize Internet usage patterns, respondents were asked to indicate their frequency of visiting certain types of Web sites, based on the study of Ferguson and Perse (2000). For better understanding by the respondents, examples of each type of Web site were also provided in the questionnaire according to the classification systems of two sources: *Net Guide* (Wolff New Media, 1997) and *Yahoo* (Yahoo, 2000 at URL: http:// www. yahoo. com). In this process, ten types of Web sites were selected for the three major categories of Web sites (the *Information* sites, the *Entertainment* sites, and the *Infortainment* sites). The observed variables of each type of Web site are shown in Table 2. Respondents rated each of these ten types of Web sites in terms of their frequency of visits. A seven-point scale was used ranging from 1 (Not at all) to 7 (Frequently) about each type of Web site.

Data Analysis

This study was designed to formulate a structural equation model with the seven latent variables. The correlation matrix among all the observed variables was used as input data for estimating the structural equation model. In order to estimate the hypothesized model, a two-step procedure was adopted in this study. The first part of the two-step procedure involved estimating a measurement model and a simultaneous equation model. Therefore, a confirmatory factor analysis with maximum likelihood estimation and a path analysis with the seven latent variables were conducted, respectively. In this process, all the factor variances were set equal to one. In the second part of the two-step procedure, the fits of the simultaneous equation model were compared to those of the measurement model in order to examine whether estimating the simultaneous equation model resulted in a significant decrement in fit. On the other hand, the error terms for some indicators were allowed to covary in the model, based on theoretically guided modification indices. Both measurement and simultaneous equation models were estimated with LISREL 8.50 by the method of maximum likelihood.

Results

The data were analyzed in the following three stages. First, a CFA measurement model was estimated in order to explain the observed variables in terms of their common underlying dimensions. Second, given an acceptable measurement model, the chi-square comparison test was conducted to compare the fit of a simultaneous equation model to that of the measurement model. Finally, the effects among the latent variables were summarized to identify the causal relationships between motivations for using the Internet and visiting certain types of Web sites.

In addition to chi-square as a measure of fit, the following indices of goodness-of-fit were also evaluated in this analysis: a confirmatory fit index (CFI), a non-normed fit index (NNFI), a root mean square error of approximation (RMSEA), a root mean square residual (RMR), a p-value for test of close fit (PCCLOSE), and an expected cross-validation index (ECVI). These fit indices were used for evaluating a model fit because no single index is regarded as a definitive index of model fit in structural equation modeling (Hu and Bentler, 1995).

Measurement Model

Means, standard deviations, and correlations among the measured variables are presented in Table 3. The measurement model supports the hypothesized four-factor solution for Internet usage motivations and the hypothesized three-factor solution for classification of Web sites. Table 4 shows a summary of goodness-of-fit indices for the measurement model. As shown in Table 4, the final measurement model (with correlated error) fits the data reasonably well. Nonetheless, it should be noted that the final measurement model proceeded through numerous modifications to improve the model fit. Initially, the 25 observed variables (15 motivations and 10 types of Web sites) were input to a confirmatory factor analysis and these variables were evaluated for modifications to the measurement model. Based on the results of exploratory factor analyses and the modification guidelines provided by Benson and El-Zahhar (1994), variables that show low factor loadings, low communalities, and large modification indices on other factors were firstly considered for elimination. In this process, one variable at a time was deleted until the results showed that elimination of another variable would not improve the fit of the model. As a result, six variables were deleted: four from Internet usage motivations ("Because it helps me solve a certain problem," "To forget about school or any other chores in my life," "To pass the time," and "So I can talk with other people about what's going on,") and two from types of Web sites (*Home & Health* and *Interaction*).

Once the elimination process was completed, correlated errors among the observed variables that show large modification indices or high standardized residuals were examined to improve the model. In this process, the two variables, "To learn about things that are useful" (useful) and "To learn about things that I haven't known" (learn), show the second largest value with in the modification indices and also indicate a large standardized residual. This indicates that a considerable decrease in chi-square is expected if the errors for "useful" and "learn" are correlated in the model. In addition, these two variables have similar meanings and belong to the same factor, the ***Information*** motivation. Therefore, the correlated error between the two variables is considered theoretically, empirically acceptable to be included in the measurement model. Given that a value of $\chi^2(131)$ for the model without the correlated error is 276.24 (see Table 4), the $\chi^2_{\text{difference}}$ statistic between the two models equals 10.12 (276.24 – 266.12), which is significant at the .05 level with a single degree of freedom (131-130). This implies that the fit of the model with the correlated error is significantly better than that of the model without the correlated error. Table 4 also shows that the selected goodness-of-fit results for the measurement model with the correlated error are satisfactory. In other words, this model seems to fit the data well in terms of RMSEA, PCCLOSE, and RMR even though this model moderately fit the data in terms of CFI and NNFI.

Simultaneous Equation Model

In order to test whether estimating the simultaneous equation model results in a significant decrement in fit, the fit of the model is compared to the fit of the measurement model by using the chi-square comparison test (see Table 4).

H_0: The target model (simultaneous equation model) fits.
H_A: The saturated model (measurement model) fits.

The test statistic is $\chi^2_{difference} = \chi^2_{sem} - \chi^2_{mm} = 293.98 - 266.12 = 27.86$, and the degrees of freedom are $df = df_{sem} - df_{mm} = 136 - 130 = 6$. Since the critical value of $\chi^2_{.05,6}$ is 12.59, the simultaneous equation model in favor of the measurement model is rejected in this analysis. This implies that the simultaneous equation model results in a significant decrement in fit. Since this model comparison test leads to a rejection of the simultaneous equation model, the modification indices are examined in order to improve the model.

According to the modification indices, the correlated errors between the *Information* sites (informn) and the *Infortainment* sites (infortan), as well as between the *Information* sites and the *Entertainment* sites (entertan), are relatively high. It is assumed that the *Information* sites contain the search engine sites, which are one of the universal types of Web sites that lead Internet users to any of the three types of Web sites. Therefore, it is reasonable to claim that the *Information* sites and the other two sites share common causes. In other words, the net effects on the *Information* sites outside the model are correlated with the net effects on either the *Infortainment* sites or the *Entertainment* sites outside the model. Therefore, correlated errors between the *Information* sites and the other two sites were included in the model, one at a time. As shown in Table 4, the model comparison test between the final measurement model and the simultaneous equation model with the correlated errors is $\chi^2_{difference}=\chi^2_{sem}-\chi^2_{mm}=270.15-266.12=4.03$, and the degrees of freedom are $df=df_{sem}-df_{mm}=134-130=4$.

Since the critical value of $\chi^2_{.05,4}$ is 9.49, the modified simultaneous equation model in favor of the measurement model is not rejected in this analysis. This implies that the measurement model and the simultaneous equation model are virtually identical without a significant decrement in fit. On the other hand, other indices of goodness-of-fit are almost identical with those of the final measurement model, as RMSEA, NNFI, and CFI indicate the exact same values (see Table 4). That means this modified simultaneous equation model seems to fit the data well in terms of RMSEA, PCCLOSE, and RMR, even though this model moderately fit the data in terms of CFI and NNFI.

Effects Among the Latent Variables

Figure 2 presents the results for the Internet uses and gratifications model predicting the visits of certain types of Web sites based on Internet usage motivations. All the observed variables indicate high factor loadings for each factor. In spite of the two nonsignificant direct paths from the *Escape* motivation to the *Entertainment* sites and from the *Interactivity* motivation to the *Infortainment* sites, the results are consistent with the proposed model (see Figure 2). First, in predicting the visits to the *Information* sites, the direct effects of both the *Information* motivation ($\beta = .23, p < .05$) and the *Interactivity* motivation ($\beta = .32, p < .01$) to the *Information* sites are statistically significant. Second, the *Infortainment* sites are most strongly affected by the *Pass Time* motivation ($\beta = .49, p < .01$), followed by the *Information* motivation ($\beta = .44, p < .01$) and the *Escape* motivation ($\beta = -.30, p < .05$). However, it is interesting to note that the standardized path coefficient from the *Interactivity* motivation to the *Infortainment* sites is statistically nonsignificant ($\beta = -.21, p > .05$). Finally, two of the three paths to the *Entertainment* sites are supportive of the predicted set of relations. For instance, the *Interactivity* motivation ($\beta = .30, p < .05$) and the *Pass Time* motivation ($\beta = .26, p < .05$) are significant predictors of visiting the *Entertainment* sites. However, the *Escape* motivation is not found to significantly contribute to visiting this type of Web site.

Discussion

The main objective of this study was to investigate whether motivations for using the Internet could explain one of the key aspects of Internet usage: visiting certain types of Web sites. The results of this study indicate that the four motivational factors have significant direct effects in predicting the visits to certain types of Web sites. These four primary motivations for using the Internet (*Information, Escape, Pass Time*, and *Interactivity*) are consistent with the findings of previous studies of Internet usage (Korgaonkar and Wolin, 1999; Papacharissi and Rubin, 2000). In addition, the three types of Web sites via confirmatory factor analysis (*Information, Infortainment*, and *Entertainment*) are largely consistent with previous studies (Lin, 1999; Ferguson and Perse, 2000). This latent variable path model provides support for the application of the uses and gratification theory to understanding the ritualized and instrumental orientations for using the Internet. As shown in Figure 2, the associations between the motivational factors and the types of Web sites distinguish the ritualized and instrumental orientations in using the Internet.

First, those who visit the *Information* types of Web sites, such as education and society, are more likely to satisfy their needs for the *Information* motivation in using the Internet. As Rubin (1984) noted that a person's type of media use can be predicted by the media usage orientations, the strong causal relationship between the *Information* sites and the *Information* motivation could be an example of the instrumental pattern of Internet uses. Therefore, it is assumed that those who frequently visit these types of Web sites tend to be active and purposive and to seek information from the Internet.

Second, the needs for *Pass Time* and *Escape* seem to reflect the ritualistic pattern of Internet uses, which involve using the medium more habitually to consume time and for diversion (Rubin, 1984). As ritualistically oriented viewers seek entertainment and relaxation when choosing a television program (Lin, 1999), it is evident that there is a strong causal association between the *Pass Time* motivation and the *Entertainment* types of Web sites. Therefore, it is assumed that those who often surf the Internet with less well-defined gratification goals are more likely to visit the *Entertainment* types of Web sites, such as showbiz, humor, games, and music. However, it should be noted that the *Escape* motivation shows different results from the *Pass Time* motivation, as the *Escape* motivation is found to have a weak relationship to the *Entertainment* sites as well as a negative relationship to the *Infortainment* sites. Since Korgaonkar and Wolin (1999) argued that the Internet can be used as a relaxant to relieve day-to-day boredom and stress, it is assumed that those who use the Internet to satisfy their needs for escape are more likely to just click and leave from the sites they visited without any determined intentions, whether it is an *Entertainment* or an *Information* type of Web sites.

Third, the *Infortainment* Web sites, as its name indicates, contain characteristics of both the *Information* and the *Entertainment* types of Web sites (Lin, 1999). Consequently, it is natural that the *Information* and the *Pass Time* motivations, the two motivations from ritualized and instrumental orientations, are both found to have a strong positive relationship to this type of Web site. The results imply that Internet users are also likely to have mixed gratifications from the Internet, as well as distinguished gratifications between the two motivations. For instance, those who visit online shopping sites attach great importance on the information factor in product search and price comparisons, whereas they also seem to have high needs for entertainment and fun in the purchasing process (Donthu and Garcia, 1999). Therefore, it is suggested that Web sites should create an effective mix of the entertainment and information factors in their dealings with existing and potential visitors who have ritualized, instrumental, or both media usage orientations.

Finally, just like the *Infortainment* sites, the *Interactivity* motivation is also believed to be based on both ritualized and instrumental orientations because those who use the Internet, more or less, should engage in message exchange and control dimensions whatever the gratifications expected from the Internet (Roehm and Haugtvedt, 1999). For this reason, this study initially hypothesized that the *Interactivity* motivation would have a positive relationship to all three types of Web sites. As expected, this motivation is shown to have a positive relationship to both the *Information* and the *Entertainment* sites. However, this motivation also shows a nonsignificant negative relationship to the *Infortainment* sites. Regarding this matter, McMillan (2000) said that even though Internet users perceive a certain degree of interactivity while using the medium, the level of users' perception of interactivity strongly depends on their involvement with the subject of the Web site. For instance, Internet users might find the medium to be less interactive when they just read information on the Web, whereas they perceive more interactivity when their control over content is increased, as in the case of search engines, chat rooms, or online games. Therefore, it is possible that people might perceive little control over the message when they visit a virtual newsstand site, one of the *Infortainment* types of Web sites, because this process is based on one-way communication from a sender to a receiver. On the other hand, people might perceive more control over communication or feedback when they use search engines or play online games because these applications are based on two-way communication between sender and receiver.

Even though the findings presented here are consonant with the proposed model, this study also contains a few limitations. First, as already mentioned, the nonrandom sample of college students might weaken the generalizability of these findings to the whole population. Second, self-report data may not be adequate to measure respondents' motivational and behavioral aspects (Ruggiero, 2000). Third, the fifteen statements for Internet usage motivations used in this study may not be enough to contain all the psychological needs for using the medium even though past research has largely supported the consistency and accuracy of these statements (Rubin, 1994). Finally, this study also used ten types of Web sites in order to examine the frequency of visits to each type of Web site. It is also possible that the types of Web sites might not be exhaustive enough to include various types of Web sites. Future research needs to consider consequences or effects possibly caused by the above limitations.

In spite of the limitations, this study is believed to support an application of the uses and gratifications theory to the Internet. In this new media environment, in which access to the Internet becomes as convenient as television, it is critical to know why and how people use the Internet. Furthermore, as the number of Web sites increases at a tremendous rate, and people become more active with just a few clicks, it is important to figure out how people utilize a variety of surfing options to decide which Web site to visit. For this purpose, this study provides a theoretical model of the relationship between the motivations for using the Internet and the types of Web sites. By analyzing a number of motives for using the Internet as well as several types of Web sites, it is possible to observe some of the causal relationships between motivational and behavioral aspects of Internet usage. Subsequently, the results of this study would help predict Web site choices of Internet users based on their ritualistic and instrumental Internet use orientations. Considering the ever-changing nature of the Internet, these results would be useful in understanding why and how people use the Internet in this new and evolving field of mass communication.

Appendices

Figure 1. Hypothesized Model

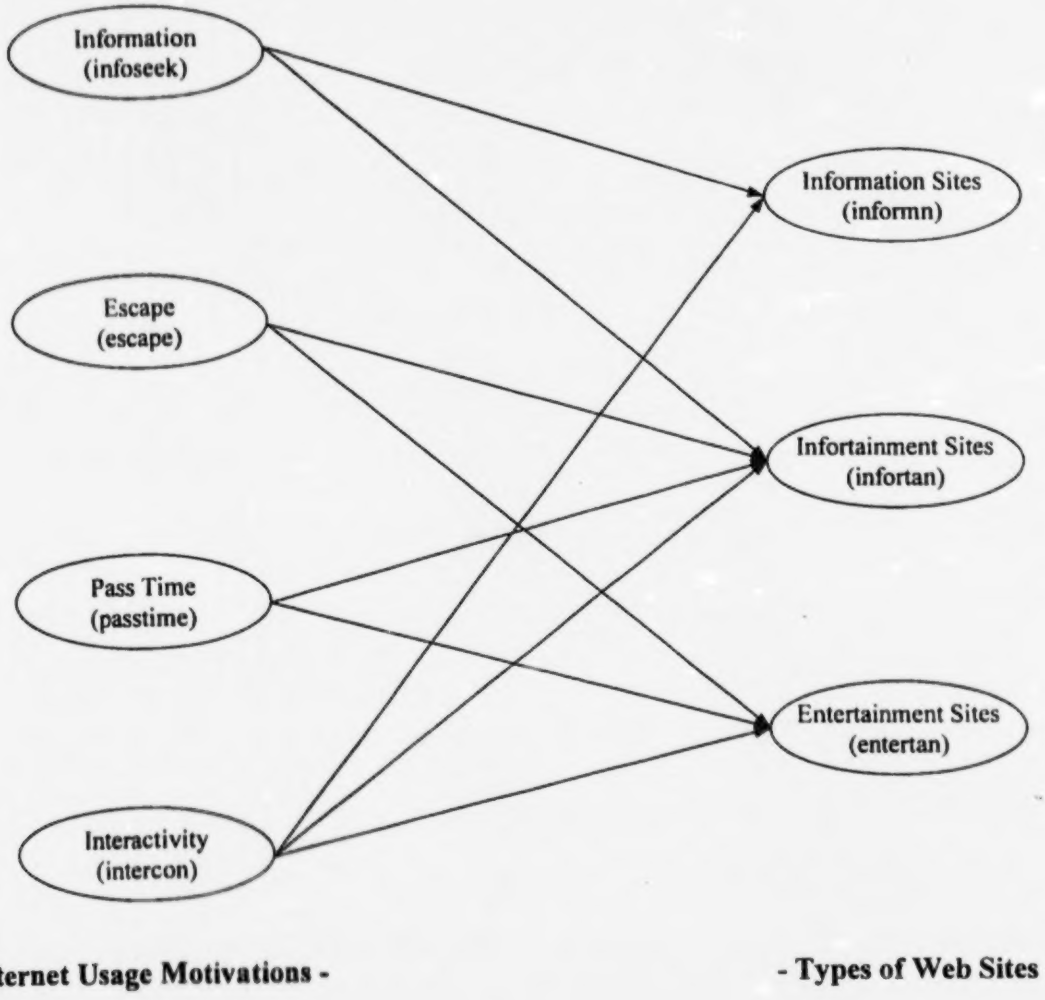

Information
(infoseek)
Escape
(escape)
Pass Time
(passtime)
Interactivity
(intercon)
Information Sites
(informn)
Infortainment Sites
(infortan)
Entertainment Sites
(entertan)
- Internet Usage Motivations -
- Types of Web Sites -

Table 1. Observed Variables of Internet Usage Motivations

Latent Variable	Observed Variable	Variable Name
Information	- To learn about things that are useful	useful
	- To learn about things that I haven't known	learn
	- To keep up with current issues in the world	goingon
	- Because it helps me solve a certain problem*	problem
Escape	- To reduce the feeling of loneliness	lonely
	- So I can get away from my problems at hand	getaway
	- When there's no one else to talk to be with	noonels
	- To forget about school or any other chores in my life*	forget
Pass Time	- Because I just like to surf the Internet	justlike
	- When I have nothing better to do	nothing
	- Because it's a habit, just something I do	habit
	- To pass the time*	passtim
Interactivity	- Because it's interactive	interact
	- Because I can decide which site to visit by my own free will	freewill
	- So I can talk with other people what's going on*	talkwith

* Variables that were deleted to improve the fit of the measurement model.

Table 2. Observed Variables of Types of Web Sites

Latent Variable	Observed Variable	Variable Name
Information	- *Search Engines* (Yahoo, Google, Hotbot, AltaVista, etc.)	search
	- *Education* (University, Library, Encyclopedia, Class related, etc.)	educaton
	- *Society* (Politics, Government, Business, Financial Market, etc.)	society
	- *Home & Health* (Parenting, Kids, Medicine, Fitness, etc)*	homehlth
Infortainment	- *Shopping* (Departments, Online Stores, Online Auctions, etc.)	shopping
	- *Recreation* (Sports, Travel, Autos, Outdoors, etc.)	recreant
	- *Virtual Newsstand* (News, Magazine, Broadcasting, Ezines, etc.)	newstand
Entertainment	- *Entertainment* (Movies, Television, Music, Adults, etc.)	entrtain
	- *Fun & Games* (Comics, Humor, Cartoons, Video Games, etc.)	fungames
	- *Interaction* (Chat, Messenger, Online Games, Gambling, etc.)*	intactn

* Variables that were deleted to improve the fit of the measurement model.

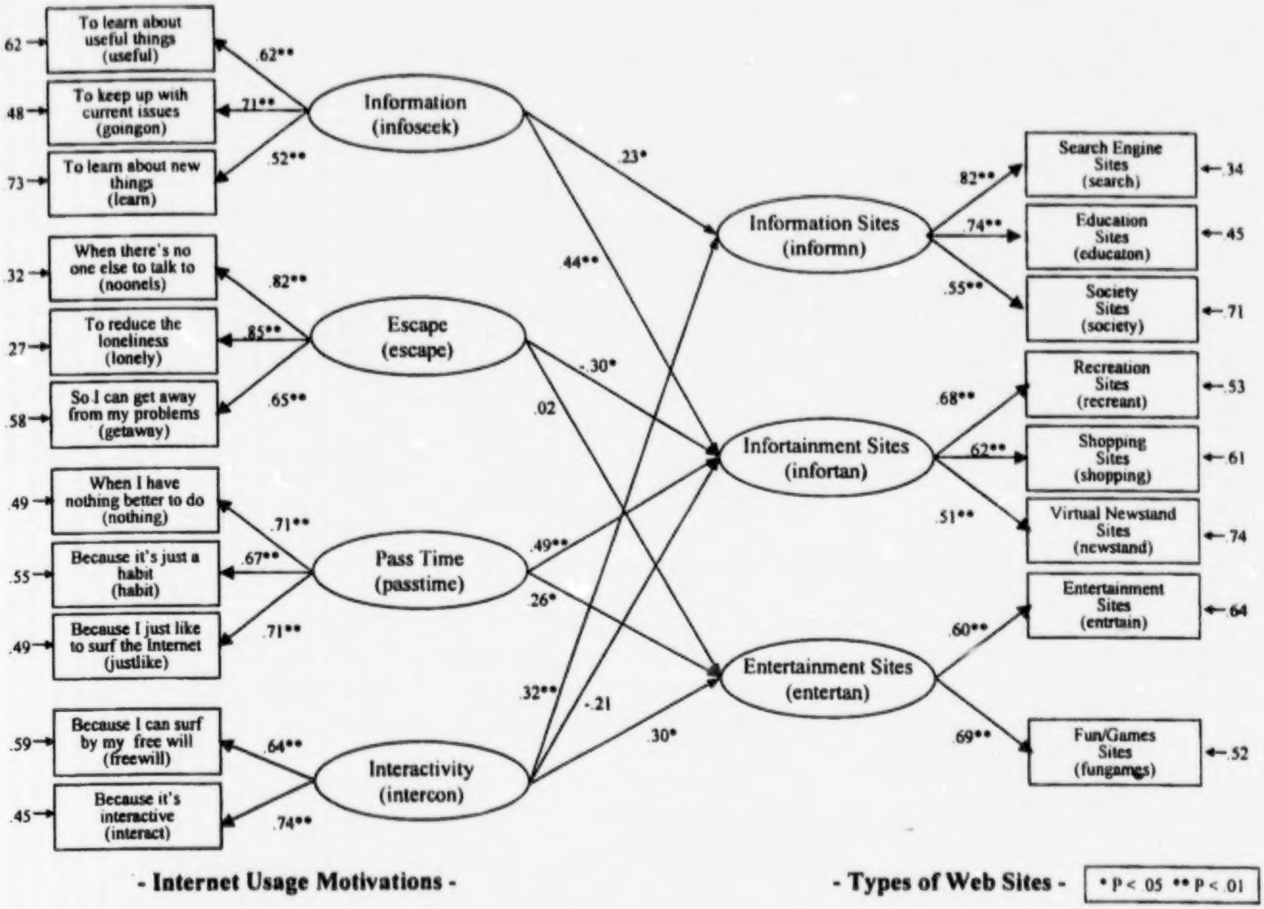
Table 3. Correlations and Descriptive Statistics for Observed Variables

ariables	01	.02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	Mean	SD
1. Learn	1.0000																			5.32	1.46
2. Goingon	.3771	1.0000																		4.37	1.64
3. Habit	.1546	.2352	1.0000																	3.44	1.78
4. Useful	.4902	.4613	.2056	1.0000																4.76	1.60
5. Nothing	.2121	.2041	.5200	.1593	1.0000															3.36	1.88
6. Freewill	.1864	.2898	.2351	.3367	.1951	1.0000														3.97	1.93
7. Interact	.2336	.3252	.2727	.2829	.2015	.4831	1.0000													3.83	1.80
8. Noonels	.1344	.1652	.3796	.1674	.4055	.2982	.4492	1.0000												3.04	1.87
9. Lonely	.1494	.2405	.3555	.1995	.3325	.3372	.4156	.7064	1.0000											2.64	1.72
0. Justlike	.2115	.2957	.4403	.2272	.5023	.2479	.3496	.3776	.3654	1.0000										3.37	1.79
1. Getaway	.1709	.1954	.3842	.1782	.3334	.2471	.2868	.5111	.5612	.3417	1.0000									2.36	1.60
2. Entrtain	.1502	.1601	.2461	.0911	.1469	.1995	.2418	.2245	.1704	.2350	.2158	1.0000								4.06	1.77
3. Fungames	.0987	.1322	.2715	.1237	.1227	.1434	.2319	.2522	.1975	.2388	.1757	.4175	1.0000							3.09	1.96
4. Recreant	.1809	.2957	.1491	.1981	.2056	.0117	.1162	.1002	.0040	.2943	.1499	.1455	.1076	1.0000						3.34	1.89
5. Shopping	.0942	.1689	.0883	.0451	.2124	.0302	.0912	.0940	-.0664	.1944	.1184	.1199	-.0088	.4279	1.0000					3.18	1.85
6. Newstand	.1295	.1625	.0431	.0296	.1698	-.0732	.0347	-.0218	-.1327	.1635	.0549	-.0204	-.1158	.3241	.3459	1.0000				4.44	1.89
7. Search	.2300	.2155	.2509	.2223	.1973	.2804	.2753	.2622	.2257	.2525	.2913	.1551	.2555	.2041	.2410	.1180	1.0000			4.86	1.54
8. Educaton	.1907	.1582	.1875	.2233	.1160	.1490	.2108	.1907	.1109	.1903	.2580	.1414	.2298	.2545	.2350	.1405	.6067	1.0000		2.49	1.73
9. Society	.1880	.3584	.1360	.2208	.0824	.1619	.1772	.1514	.1307	.1915	.1943	.1571	.1727	.1282	.1476	.1626	.4275	.3929	1.0000	2.16	1.52

Table 4. Summary of Goodness-of-Fit Indices

	Measurement Model	Measurement Model	Simultaneous Equation Model	Simultaneous Equation Model
Correlated Error	None	useful / learn	useful / learn	useful / learn infortan / informn entertan / informn
χ^2	276.24	266.12	293.98	270.15
df	131	130	136	134
RMSEA	.051	.050	.054	.050
PCCLOSE	.42	.48	.21	.52
CFI	.93	.94	.93	.94
NNFI	.91	.92	.91	.92
ECVI	.99	.98	1.03	.97
RMR	.050	.049	.055	.050

Figure 2. Structural Equation Model


62
To learn about useful things (useful)
.62**
48
To keep up with current issues (goingon)
.71**
73
To learn about new things (learn)
.52**
Information (infoseek)
.32
When there's no one else to talk to (noonels)
.82**
.27
To reduce the loneliness (lonely)
.85**
.58
So I can get away from my problems (getaway)
.65**
Escape (escape)
.49
When I have nothing better to do (nothing)
.71**
.55
Because it's just a habit (habit)
.67**
.49
Because I just like to surf the Internet (justlike)
.71**
Pass Time (passtime)
.59
Because I can surf by my free will (freewill)
.64**
.45
Because it's interactive (interact)
.74**
Interactivity (intercon)
.23*
.44**
-.30*
.02
.49**
.26*
.32**
-.21
.30*
Information Sites (informn)
Infortainment Sites (infortan)
Entertainment Sites (entertan)
.82**
Search Engine Sites (search)
.34
.74**
Education Sites (educaton)
.45
.55**
Society Sites (society)
.71
.68**
Recreation Sites (recreant)
.53
.62**
Shopping Sites (shopping)
.61
.51**
Virtual Newsstand Sites (newsstand)
.74
.60**
Entertainment Sites (entrtain)
.64
.69**
Fun/Games Sites (fungames)
.52
- Internet Usage Motivations -
- Types of Web Sites -
* P < .05 ** P < .01

References

Alba, Joseph, John Lynch, Barton Weitz, Chris Janiszewski, Richard Lutz, Alan Sawyer, and Stacy Wood (1997), "Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces," *Journal of Marketing* (61), pp. 38-53.

Atkin, David J., Leo W. Jeffries, and Kimberly A. Neuendorf (1998), "Understanding Internet Adoption as Telecommunications Behavior," *Journal of Broadcasting & Electronic Media* (42), No. 4, pp. 475-490.

Babrow, Austin S. (1987), "Student Motives for Watching Soap Operas," *Journal of Broadcasting & Electronic Media* (31), No. 3, pp. 309-321

Benson, Jeri and Nabil El-Zahhar (1994), Further Refinement and Validation of the Revised Test Anxiety Scale," *Structural Equation Modeling* (1), No. 3, pp. 203-221.

Cohen, Akiba A., Mark R. Levy, and Karen Golden (1988), "Children's Uses and Gratifications of Home VCRs: Evolution or Revolution," *Communication Research* (15), No. 6, pp. 772-780.

Conway, Joseph C. and Alan M. Rubin (1991), "Psychological Predictors of Television Viewing Motivation," *Communication Research* (18), No. 4, pp. 443-463.

Donthu, Naveen and Adriana Garcia (1999), "The Internet Shopper," *Journal of Advertising Research* (39), No. 3, pp. 52-58.

Eighmey, John (1997), "Profiling User Responses to Commercial Web Sites," *Journal of Advertising Research* (37), No. 3, pp. 59-66.

Eighmey, John and Lola McCord (1998), "Adding Value in the Information Age: Uses and Gratifications of Sites on the World Wide Web," *Journal of Business Research* (41), pp. 187-194.

Elliott, William R. and William L. Rosenberg (1987), "The 1985 Philadelphia Newspaper Strike: A Uses and Gratifications Study," *Journal Quarterly* (64), pp. 679-687.

Ferguson, Douglas A. and Elizabeth M. Perse (2000), "The World Wide Web as a Functional Alternative to Television," *Journal of Broadcasting & Electronic Media* (44), No. 2, pp. 155-174.

Flanagin, Andrew J. and Miriam J. Metzger (2001), "Internet Use in the Contemporary Media Environment," *Human Communication Research* (27), No. 1, pp. 153-181.

Frazer, Charles and Sally J. McMillan (1999), "Sophistication on the World Wide Web: Evaluating Structure, Function, and Commercial Goals of Web Sites," In Schumann, D. W. and E. Thorson (eds.), *Advertising and The World Wide Web*, Mahwah, NJ: Lawrence Erlbaum Associates, Publishers, pp. 119-134.

Gehrt, Kenneth C. and Kent Carter (1992), "An Exploratory Assessment of Catalog Shopping Orientations: The Existence of Convenience and Recreational Segments," *Journal of Direct Marketing* (6), No. 1, pp. 29-39.

Ghose, Sanjoy and Wenyu Dou (1998), "Interactive Functions and Their Impacts on the Appeal of Internet Presence Sites," *Journal of Advertising Research* (38), No. 2, pp. 29-43.

Hu, Li-Tze and Peter M. Bentler (1995), "Evaluating Model Fit," In Hoyle, R. H. (ed.), *Structural Equation Modeling: Concepts, Issues, and Applications*, Thousand Oaks, CA: SAGE Publications, Inc., pp. 76-99.

Kaye, Barbara K. and Thomas J. Johnson (2001), "A Web for All Reasons: Uses and Gratifications of Internet Resources for Political Information," Paper presented at the annual meeting of AEJMC, Washington, DC.

Korgaonkar, Pradeep K. and Lori D. Wolin (1999), "A Multivariate Analysis of Web Usage," *Journal of Advertising Research* (39), No. 2, pp. 53-68.

LaRose, Robert, Dana Mastro, and Matthew S. Eastin (2001), "Understanding Internet Usage: A Social-Cognitive Approach to Uses and Gratifications," *Social Science Computer Review* (19), No. 4, pp. 395-413.

Leung, Louis and Ran Wei (2000), "More Than Just Talk on the Move: Uses and Gratifications of the Cellular Phone," *Journalism & Mass Communication Quarterly* (77), No. 2, pp. 308-320.

Levy, Mark R. (1987), "VCR Use and the Concept of Audience Activity," *Communication Quarterly* (35), pp. 267-275.

Lin, Carolyn A. (1996), "Looking Back: The Contribution of Blumler and Katz's Uses of Mass Communication to Communication Research," *Journal of Broadcasting and Electronic Media* (40), No. 4, pp. 574-581.

Lin, Carolyn A. (1999), "Online-Service Adoption Likelihood," *Journal of Advertising Research* (39), No. 2, pp. 79-89.

Lin, Carolyn A. (1999), "Uses and Gratifications," In G. Stone, M. Singletary, and V. P. Richmond (eds.), *Clarifying Communication Theories: A Hands-On Approach*, Ames, Iowa: Iowa State University Press. pp. 199-208.

Lin, Carolyn A. (2001), "Audience Attributes, Media Supplementation, and Likely Online Service Adoption," *Mass Communication and Society* (4), No. 1, pp. 19-38.

McMillan, Sally J. (2000), "Interactivity is in the Eye of Beholder: Function, Perception, Involvement, and Attitude Toward the Web Site," *Proceedings of the 2000 Conference of American Academy of Advertising*, In M. A. Shaver, (eds.), East Lansing, MI: American Academy of Advertising, pp. 71-77.

Papacharissi, Zizi and Alan M. Rubin (2000), "Predictors of Internet Use," *Journal of Broadcasting & Electronic Media* (44), No. 2, pp. 175-196.

Parker, Betty J. and Richard E. Plank (2000), "A Uses and Gratifications Perspective on the Internet as a New Information Source," *American Business Review* (18), June, pp. 43-49.

Pastore, Michael (2000), "Demographics of the Net Getting Older," *The Big Picture Demographics*, [URL:http://cyberatlas.internet.com/big_picture/demographics/article/0,1323,5901_448131,00.html].

Rafaeli, Sheizaf (1986), "The Electronic Bulletin Board: A Computer-Driven Mass Medium," *Computers and the Social Sciences* (2), No. 2, pp. 123-136.

Roehm, Harper A. and Curtis P. Haugtvedt (1999), "Understanding Interactivity of Cyberspace Advertising," In Schumann, D. W. and E. Thorson (eds.), *Advertising and The World Wide Web*, Mahwah, NJ: Lawrence Erlbaum Associates, Publishers, pp. 27-39.

Rubin, Alan M. (1983), "Television Uses and Gratifications: The Interactions of Viewing Patterns and Motivations," *Journal of Broadcasting* (27), No. 1, pp. 37-51.

Rubin, Alan M. (1984), "Ritualized and Instrumental Television Viewing," *Journal of Communication* (34), No. 3, pp. 67-77.

Rubin, Alan M. (1985), "Uses of Daytime Television Soap Operas by College Students," *Journal of Broadcasting & Electronic Media* (29), No. 3, pp. 241-258.

Rubin, Alan M. (1994), "Media Uses and Effects: A Uses and Gratifications Perspective," In J. Bryant and D. Zillmann (eds.), *Media Effects: Advances in Theory and Research*, Hillsdale, NJ: Lawrence Erlbaum Associates. pp. 417-436.

Ruggiero, Thomas E. (2000), "Uses and Gratifications Theory in the 21st Century," *Mass Communication and Society* (3), No. 1, pp. 3-37.

Schumann, David W. and Esther Thorson (1999), "Thought Regarding the Present and Future of Web Advertising," In Schumann, D. W. and E. Thorson (eds.), *Advertising and The World Wide Web*, Mahwah, NJ: Lawrence Erlbaum Associates, Publishers, pp. 301-308.

Severin, Werner J. and James W. Tankard (1997), *Communication Theories: Origins, Methods, and Uses in the Mass Media (4th ed.)*, White Plains, NY: Longman.

Wolff, Michael (1997), *Net Guide: Complete Guide to the Internet and Online Services*, New York, NY: Dell Publishing.

Yahoo.com (2000), [URL:http://www.yahoo.com].

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

☒ This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☐ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").

EFF-089 (1/2003)